



SERVICE MANUAL

Sec. 1: Main Section

- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's

Sec. 2: Deck Mechanism Section

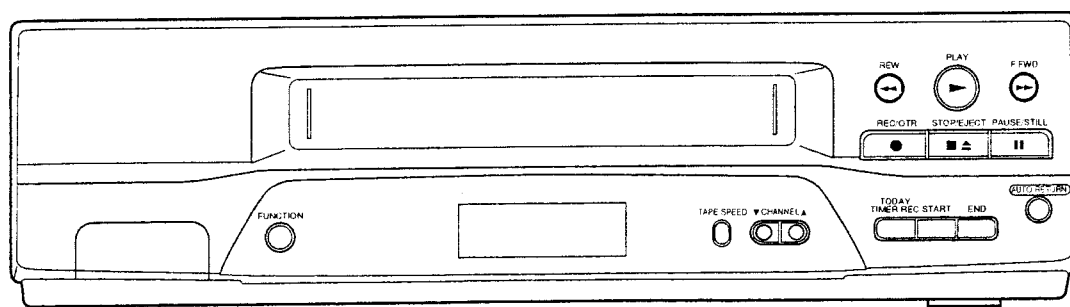
- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
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Sec. 3: Exploded Views and Parts List Section

- Exploded Views
- Parts List

4 head Hi-Fi 4VIDEO CASSETTE RECORDER

**19A-600 / 19A-604 /
19A-620 / 19A-624**



MAIN SECTION

4 head Hi-Fi VIDEO CASSETTE RECORDER

19A-600 / 19A-604 / 19A-620 / 19A-624

Sec. 1: Main Section

- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA' s

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SPECIFICATIONS

Description	Unit	Minimum	Nominal	Maximum	Remark
1. Video					
1-1. Video Output (PB)	Vp-p	0.8	1.0	1.2	FL6A
1-2. Video Output (R/P)	Vp-p	0.8	1.0	1.2	
1-3. Video S/N Y (R/P)	dB	40	45		SP Mode, W/O Burst
1-4. Video Color S/N AM (R/P)	dB	37	41		SP Mode
1-5. Video Color S/N PM (R/P)	dB	30	36		SP Mode
1-6. Resolution (PB)	Line	230	245		SP Mode
2. Servo					
2-1. Jitter Low (R/P)	μsec		0.07	0.12	SP Mode
2-2. Wow & Flutter (R/P)	%		0.3	0.5	SP Mode
3. Normal Audio					
3-1. Output (PB)	dBV	-9	-6	-3	SP Mode
3-2. Output (R/P)	dBV	-9	-6	-1.5	SP Mode
3-3. S/N (R/P)	dB	36	41		SP Mode
3-4. Distortion (R/P)	%		1.0	4.0	SP Mode
3-5. Freq. resp (R/P) at 200Hz	dB	-11	-4		SP Mode
(-20dB ref. 1kHz) at 8kHz	dB	-14	-4		SP Mode
4. Tuner					
4-1. Video output (E-E)	Vp-p	0.8	1.0	1.2	E-E Mode
4-2. Video S/N (E-E)	dB	39	42		E-E Mode
4-3. Audio output (E-E)	mV/rms	250	400	550	E-E Mode
4-4. Audio S/N (E-E)	dB	40	46		E-E Mode
5. Hi-Fi Audio					
5-1. Output	dBV	-20	-8	-12	SP Mode
5-2. Dynamic Range	dB	70	85		SP Mode
5-3. Freq. resp (6dB B. W)	Hz		20~20K		SP Mode

Note: Nominal specs represent the design specs. All units should be able to approximate these – some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable; In no case should a unit fail to meet limit specs.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a \triangle on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

- A. Parts identified by the \triangle symbol are critical for safety. Replace only with part number specified.
- B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
- D. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation tape
 - 2) PVC tubing
 - 3) Spacers
 - 4) Insulators for transistors
- E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
- G. Check that replaced wires do not contact sharp edges or pointed parts.
- H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.

Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')
230 to 240 V	$\geq 3\text{mm}(d)$ $\geq 6\text{mm}(d')$

Note: This table is unofficial and for reference only.
Be sure to confirm the precise values.

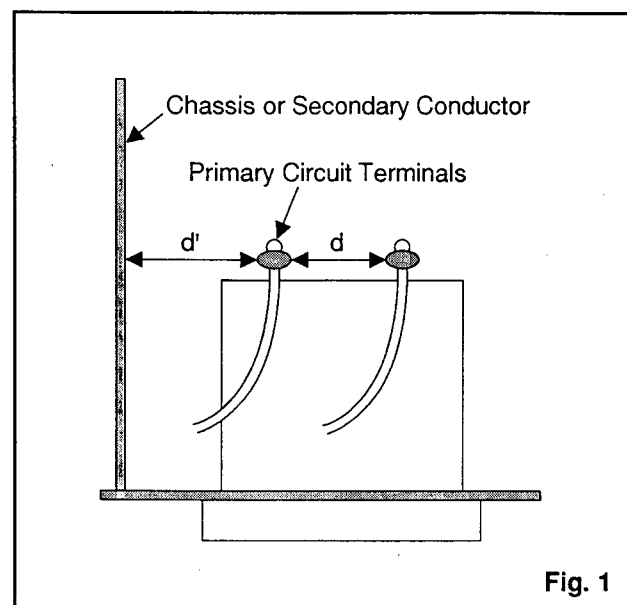


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z . See Fig. 2 and the following table.

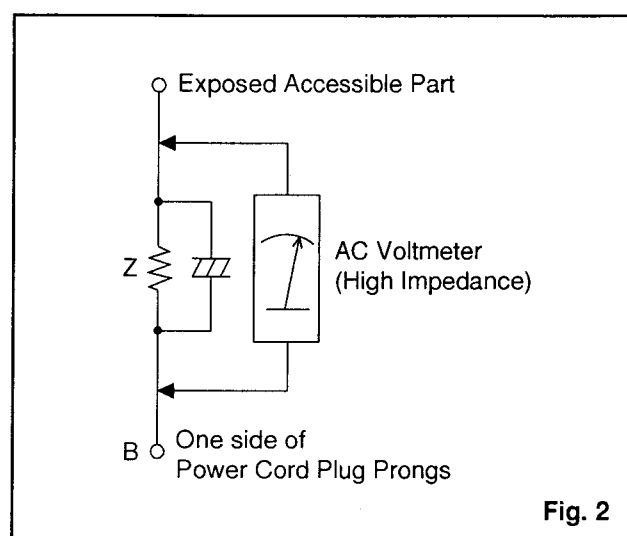


Fig. 2

Table 2 : Leakage current ratings for selected areas

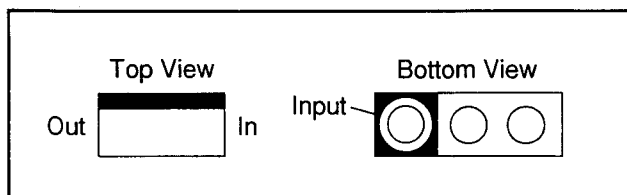
AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
230 to 240 V	2k Ω RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	RF or Antenna terminals
	50k Ω RES. Connected in parallel	$i \leq 0.7\text{mA AC Peak}$ $i \leq 2\text{mA DC}$	A/V Input, Output

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

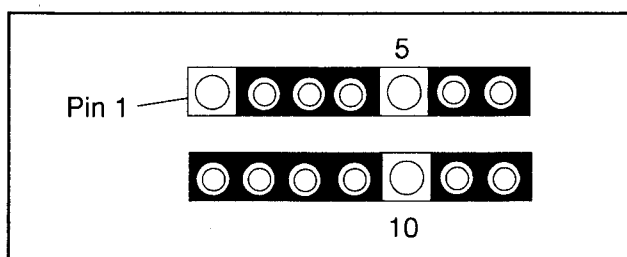
STANDARD NOTES FOR SERVICING

Circuit Board Indications

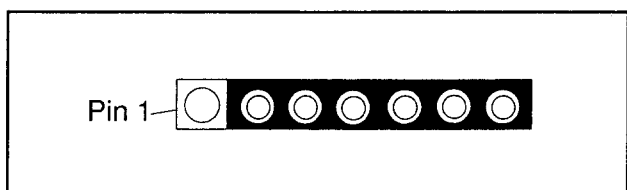
- a. The output pin of the 3 pin Regulator ICs is indicated as shown.



- b. For other ICs, pin 1 and every fifth pin are indicated as shown.

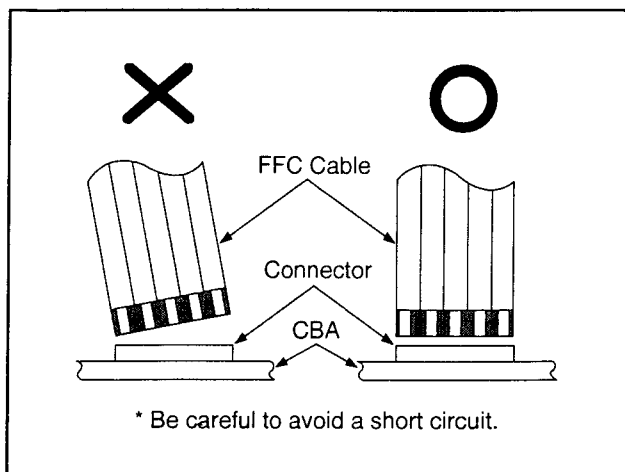


- c. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.

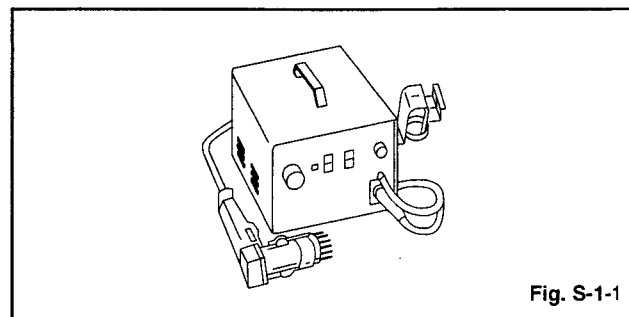


How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

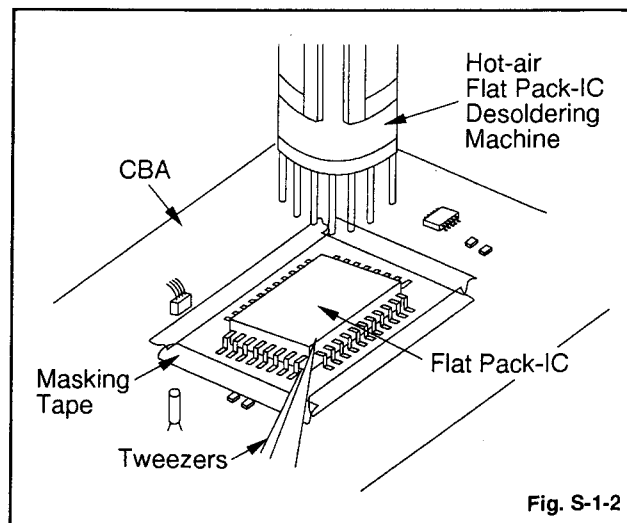
- (1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)



- (2) Remove the flat pack-IC with tweezers while applying the hot air.
- (3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

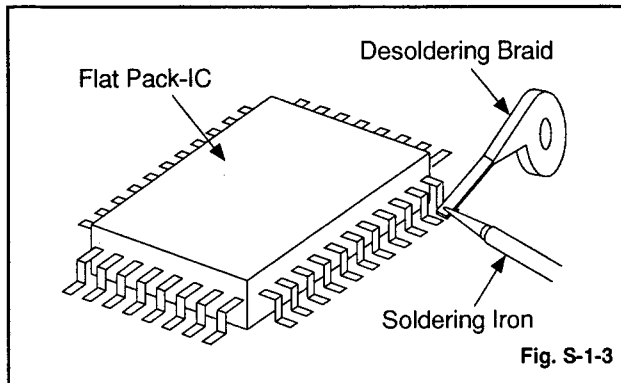
Caution:

1. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

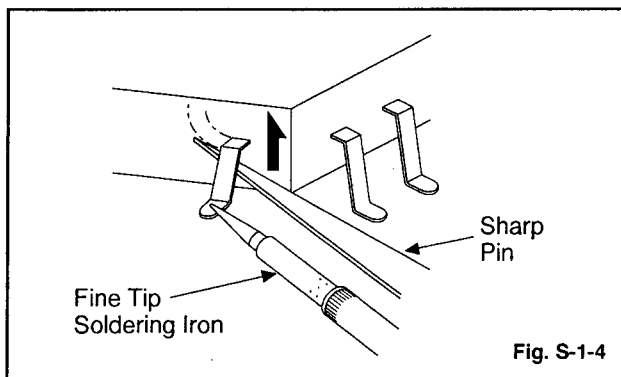


With Soldering Iron:

- (1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)



- (2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)



- (3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

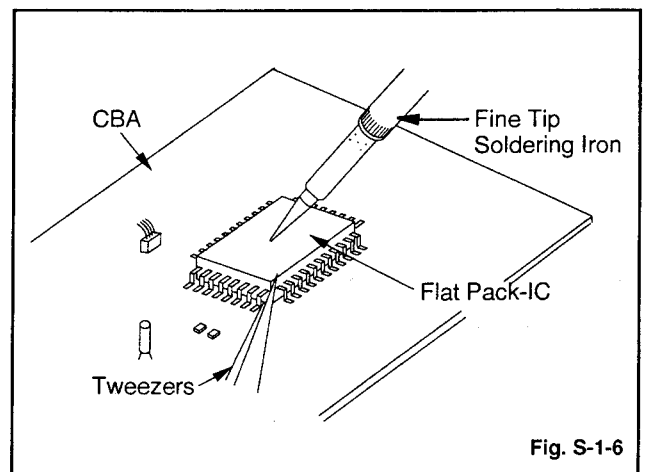
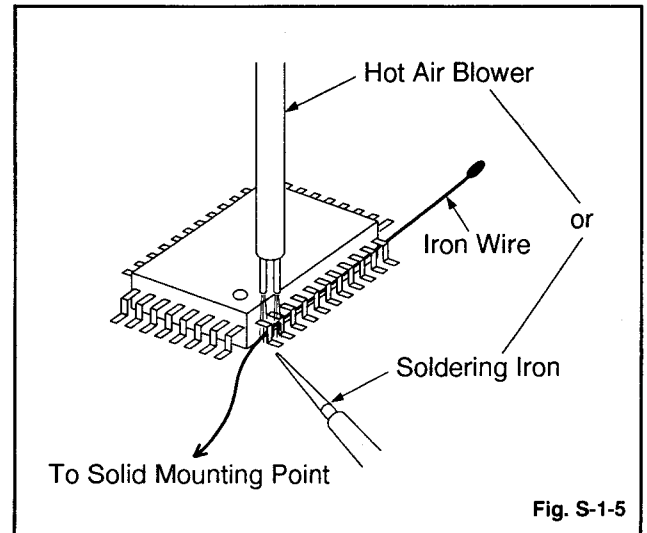
- (1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
- (2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- (3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
- (4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply

soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)

- (5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

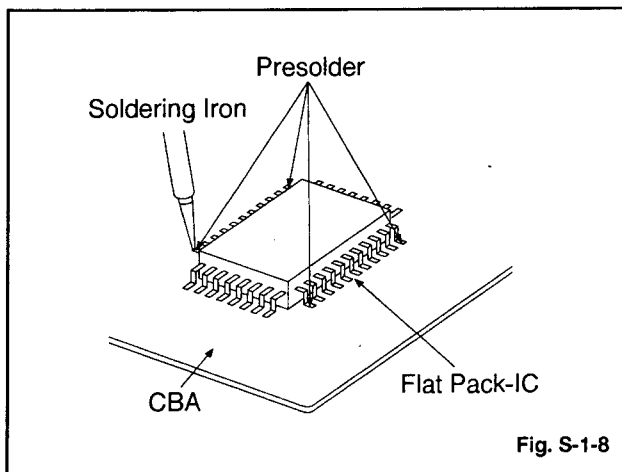
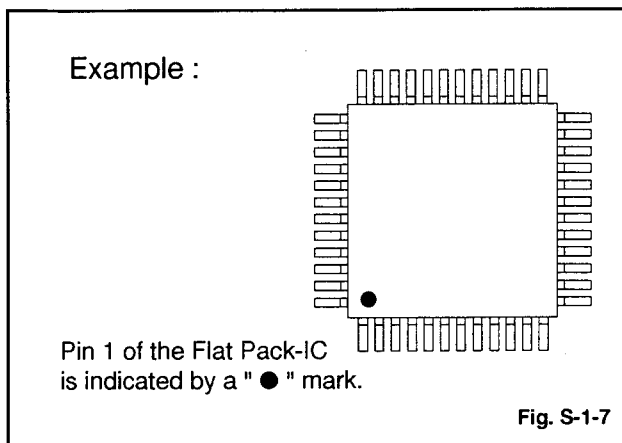
Note:

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.



2. Installation

- (1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
- (2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then pre-solder the four corners of the flat pack-IC. (See Fig. S-1-8.)
- (3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.



Instructions for Handling Semiconductors

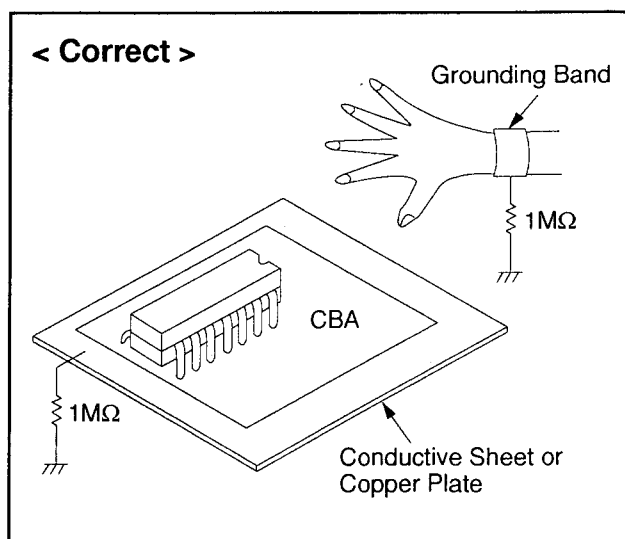
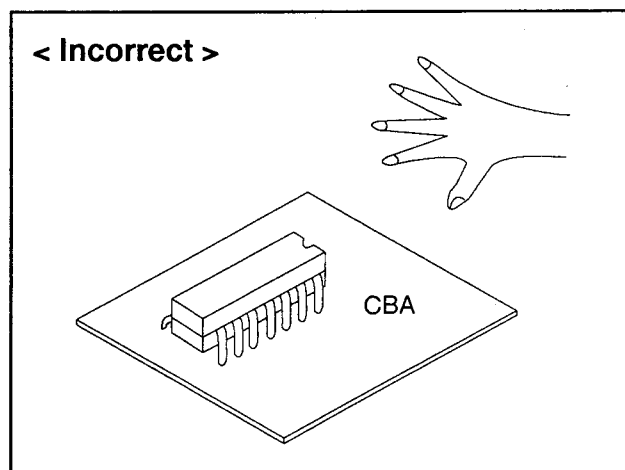
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band ($1\text{M}\Omega$) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding ($1\text{M}\Omega$) on the workbench or other surface, where the semiconductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors with your clothing.



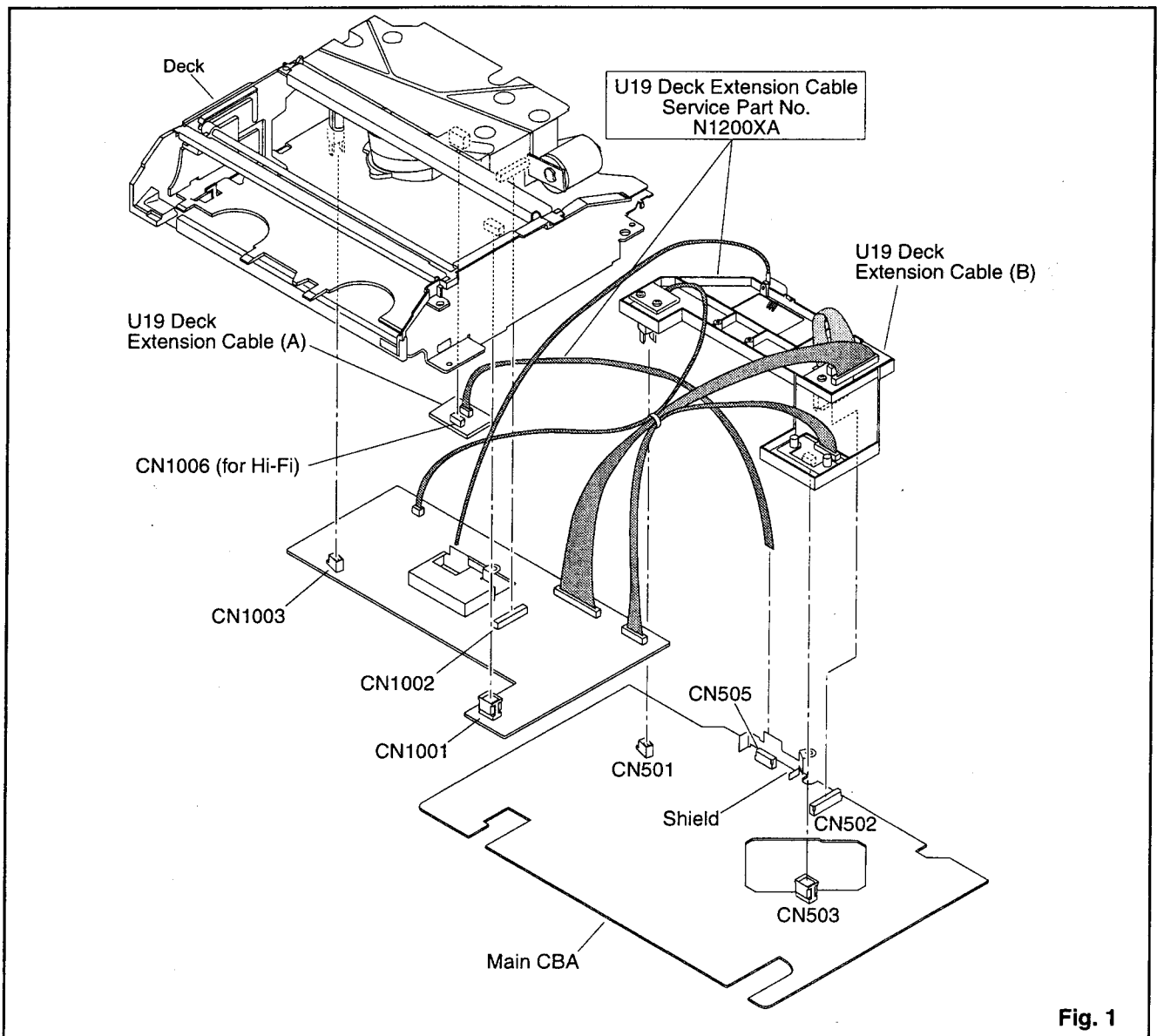
PREPARATION FOR SERVICING

How to Use U19 Deck Extension Cable

- (1) Remove the Deck Mechanism Assembly. If needed, remove the Main CBA from the chassis. Refer to "Cabinet Disassembly Instructions" on page 1-5-1.
- (2) Connect Main CBA and Deck with the U19 Deck Extension Cable (A) as shown in Fig. 1. And connect Main CBA and Deck with U19 Deck Extension Cable (B) as shown in Fig. 1. Connect 2 Clips on U19 Deck Extension Cable (B) to Shield on Main CBA.
(U19 Deck Extension Cable: N1200XA)

Note 1: There are 3 types of U19 Deck Extension Cable (A). They are for 2 Head, 4 Head, and Hi-Fi. Use a connector indicated as shown. Be careful not to let the unused connector contact other parts.

Note 2: Some noise will be present in the playback picture when the extension cable is used.



How to Enter the Service Mode

Note: When the unit is set in the service mode, the display will keep blinking.

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP502 (SENSOR INHIBITION) to TP501 (GROUND). This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 2.

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

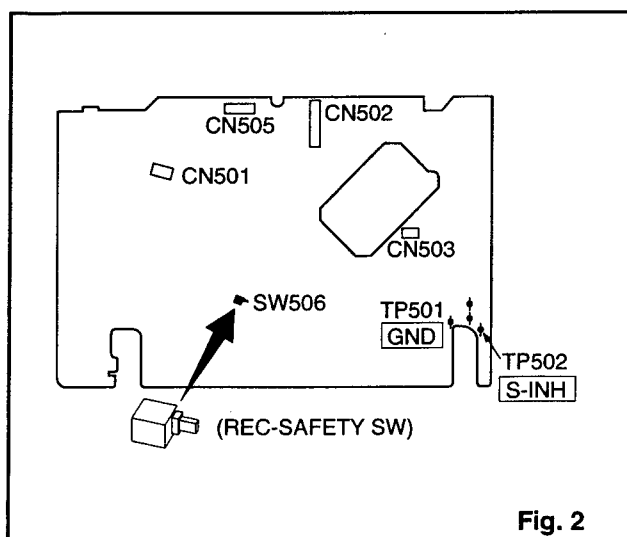
About REC-Safety Switch

Caution:

The REC-Safety Switch is directly mounted on the Main CBA. When the Deck Mechanism Assembly is removed from the Main CBA for servicing, this switch does not work automatically.

What to do for preparation

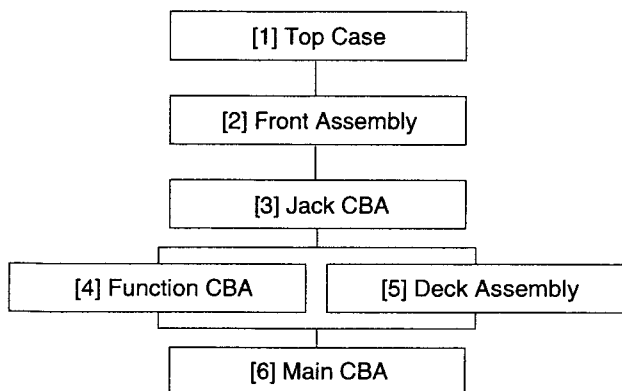
In order to record, press the Rec button while pushing REC-SAFETY SW on the Main CBA. See Fig. 2.



CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Top Case	1	5(S-1)	-
[2]	Front Assembly	2, 3	*7(L-1)	1
[3]	Jack CBA	4	3(S-2), (CN901)	-
[4]	Function CBA	2, 5	*(L-2), (CN505)	2
[5]	Deck Assembly	6	5(S-3), (CN251, CN501, CN503, CN505)	3
[6]	Main CBA	5, 7	3(S-4), *2(L-3)	4

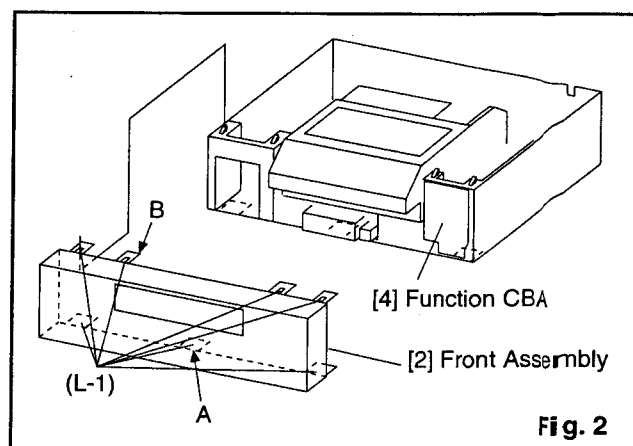
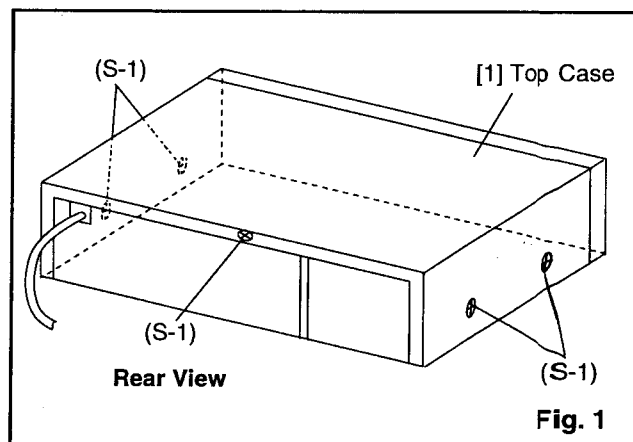
① ② ③ ④ ⑤

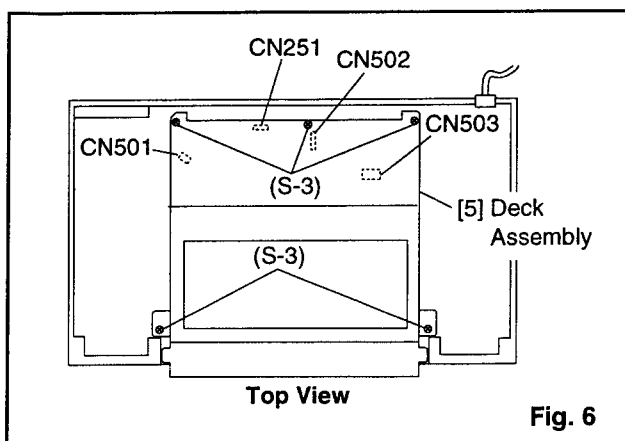
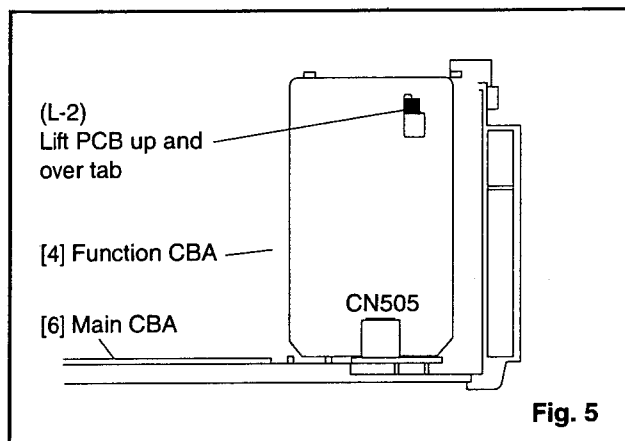
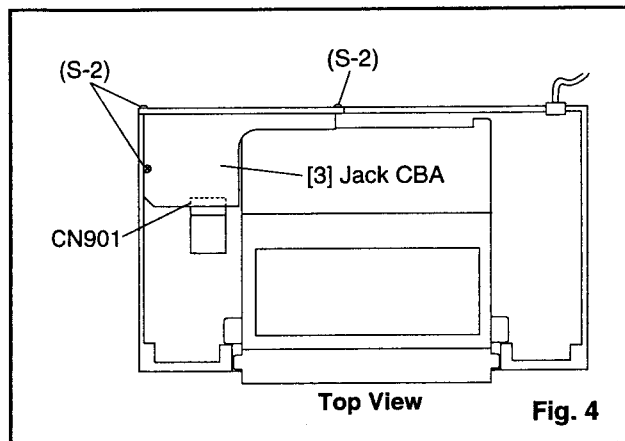
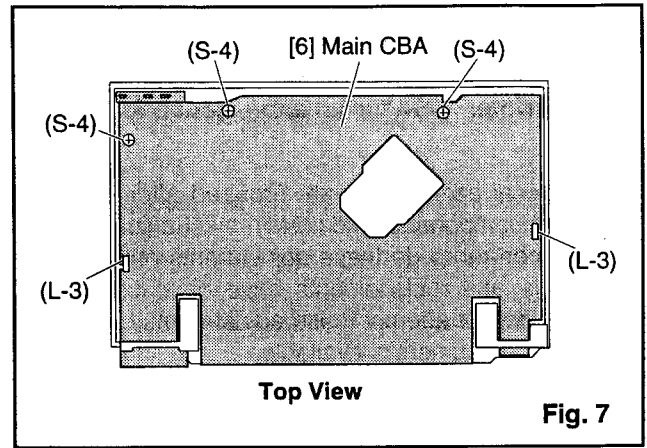
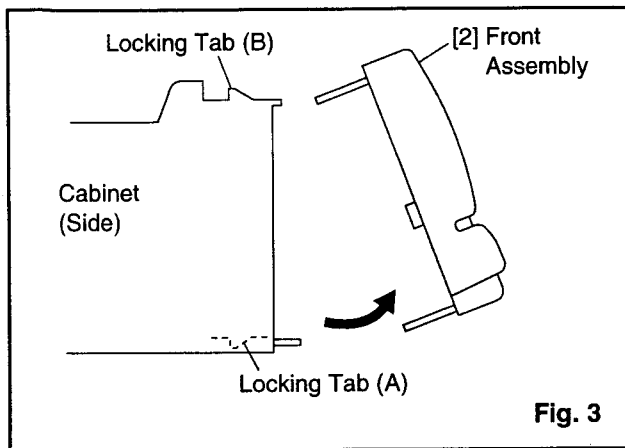
- ①: Identification (location) No. of parts in the figures
 ②: Name of the part
 ③: Figure Number for reference
 ④: Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
 P=Spring, L=Locking Tab, S=Screw,
 CN=Connector
 *=Unhook, Unlock, Release, Unplug, or Desolder
 e.g. 2(S-2) = two Screws (S-2),
 2(L-2) = two Locking Tabs (L-2)
 ⑤: Refer to "Reference Notes."

Reference Notes

CAUTION: Locking Tabs (L-1) are fragile. Be careful not to break them.

1. Release 7 Locking Tabs (L-1). To do this, first release three Locking Tabs (A) at the bottom, and then four Locking Tabs (B) at the top. (Fig. 2, 3)
2. Disconnect Connector (CN505) to remove Function CBA. Hold Main CBA while pulling up on the Function CBA. (Fig. 5)
3. Remove 5 Screws (S-3). Then slowly lift the Deck Assembly up. Lifting Deck Assembly disconnects 4 Connectors (CN251, CN501, CN503, CN505). (Fig. 6)
4. When reassembling the unit, always reinsert Locking Tabs (L-3), and then reinstall Screws (S-4). These screws are critical for proper shielding of the Main CBA. (Fig. 7)





ELECTRICAL ADJUSTMENT INSTRUCTIONS

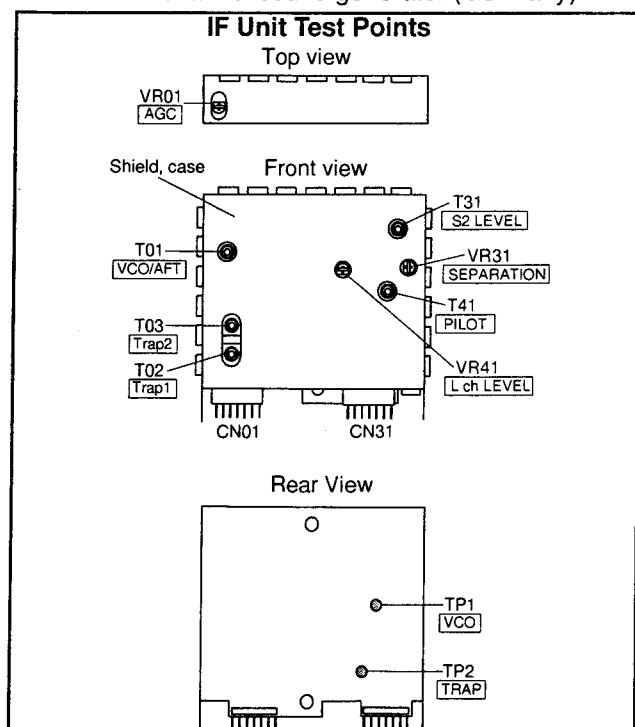
General Note: "CBA" is an abbreviation for "Circuit Board Assembly".

Notes:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either channel "▼" or "▲" button first, then the "PLAY" button (VCR's Front Panel only).

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe, V-Range: 0.001~50V/Div., F-Frange: AC~DC-20MHz
2. PAL Pattern Generator (color bar with 100% white)
3. Alignment Tape (FL6A)
4. Blank Tape (Available Locally)
5. Spectrum Analyzer
6. TV UP Converter
7. DC Voltmeter
8. AC Voltmeter
9. Distortion meter
10. TV Modulator
11. TV Monitor
12. TV multi channel sound generator (Germany)



1. Head Switching Position Adjustment

Purpose: To determine the Head Switching point during playback.

Symptom of Misadjustment: May cause Head Switching noise or vertical jitter in the picture.

Test Point	Adj. Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (SW-P)	PLAY (SP)	—
Tape	Measurement Equipment	Spec.	
FL6A	Oscilloscope	6.5H±1H (412.7±60μs)	

Connections of Measurement Equipment

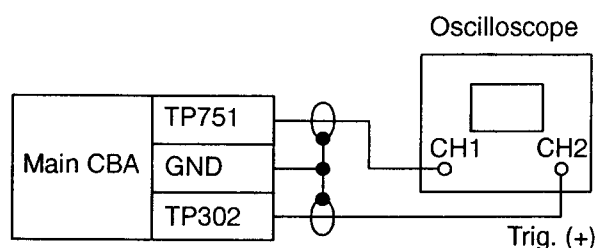
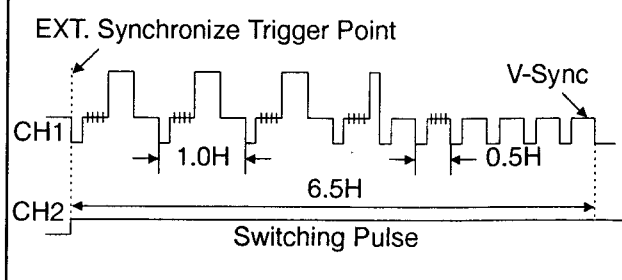


Figure 1



Reference Note:

TP302, TP751, VR501 : Main CBA

- Play back the test tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H(412.7μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

2. IF Unit Adjustment 1

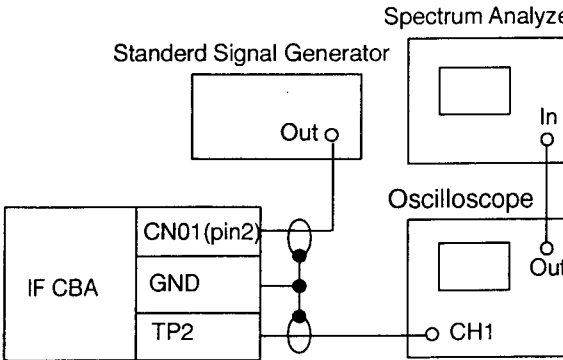
Note: Remove the IF unit from the Main CBA.

2-1. Adjacent Channel Trap Adjustment 1

Purpose: To comply IF for local radio wave regulation.

Symptom of Misadjustment: It may cause the noise in picture that audio IF may affect to video IF.
If the frequency of trap overlap on video IF, IC input level will be lower and The S/N ratio will be lower.

Test Point	Adj. Point	Mode	Input
Pin2 of CN01 TP2 (TRAP)	T02 (Trap1)	---	31.9MHz (70dB μ V sine wave)
Tape	Measurement Equipment	Spec.	
---	Standard Signal Generator/ Oscilloscope/ Spectrum Analyzer	---	

Connections of Measurement Equipment			
			

Reference Notes:

Pin2 of CN01, T02, TP2 : IF CBA (IF unit)

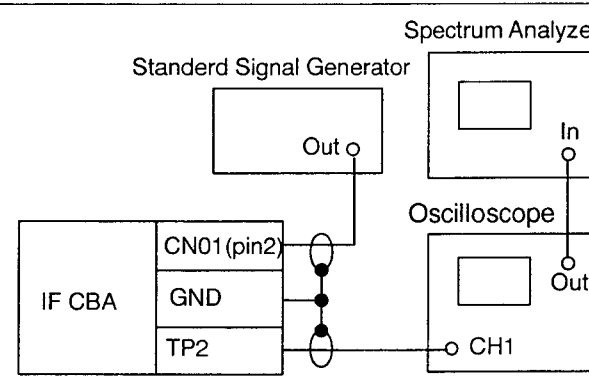
1. Input Signal to Pin2 of CN01.
2. Adjust core of Coil T02 so that the waveform level becomes minimum.

2-2. Adjacent Channel Trap Adjustment2

Purpose: To comply IF for local radio wave regulation.

Symptom of Misadjustment: It may cause the noise in picture that audio IF may affect to video IF.
If the frequency of trap overlap on video IF, IC input level will be lower and The S/N ratio will be lower.

Test Point	Adj. Point	Mode	Input
Pin2 of CN01 TP2 (TRAP)	T03 (Trap2)	---	41.4MHz (70dBμV sine wave)
Tape	Measurement Equipment	Spec.	
---	Standard Signal Generator/ Oscilloscope/ Spectrum Analyzer	---	

Connections of Measurement Equipment			
 <p>The diagram illustrates the setup for measuring the adjacent channel trap. It features three main components: a Standard Signal Generator, a Spectrum Analyzer, and an Oscilloscope. The Standard Signal Generator's 'Out' terminal is connected to the 'Out' terminal of the IF CBA (specifically Pin2 of CN01). The Spectrum Analyzer's 'In' terminal is also connected to the 'Out' terminal of the IF CBA. The Oscilloscope's 'Out' terminal is connected to the TP2 terminal of the IF CBA. The IF CBA is shown with three terminals: CN01 (pin2), GND, and TP2.</p>			

Reference Notes:

Pin2 of CN01, T03, TP2 : IF CBA (IF unit)

1. Input Signal to Pin1 of CN01.
2. Adjust core of Coil T03 so that the waveform level becomes minimum.

3. IF Unit Adjustment 2

Note: Install the IF unit on Main CBA.

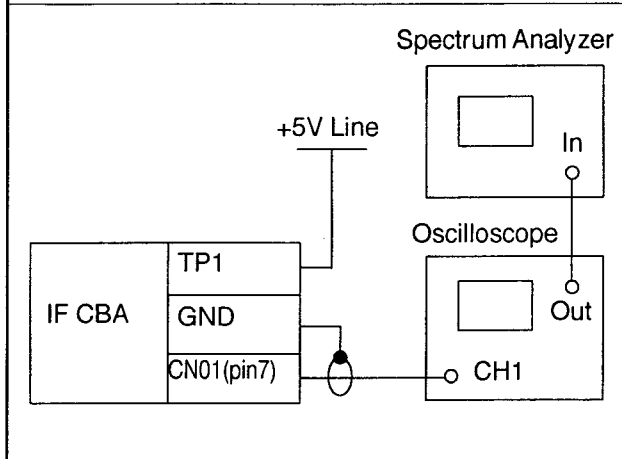
3-1. VCO Adjustment

Purpose: To adjust IF signal to optimum frequency .

Symptom of Misadjustment: Tuning will result un-synchronized

Test Point	Adj. Point	Mode	Input
Pin7 of CN01 TP1(VCO)	T01 (VCO)	---	---
Tape	Measurement Equipment	Spec.	
---	Oscilloscope Spectrum Analyzer	38.9MHz	

Connections of Measurement Equipment



Reference Notes:

Pin7 of CN01, TP1, T01 : IF CBA (IF Unit)

1. Connect PCB Jumper between TP1 and +5V line.
Operate the IF unit for at least 5 minutes. (See above Figure.)
2. Adjust T01 (VCO) so that the VCO of the frequency becomes following value.

*IF frequency= 38.9MHz

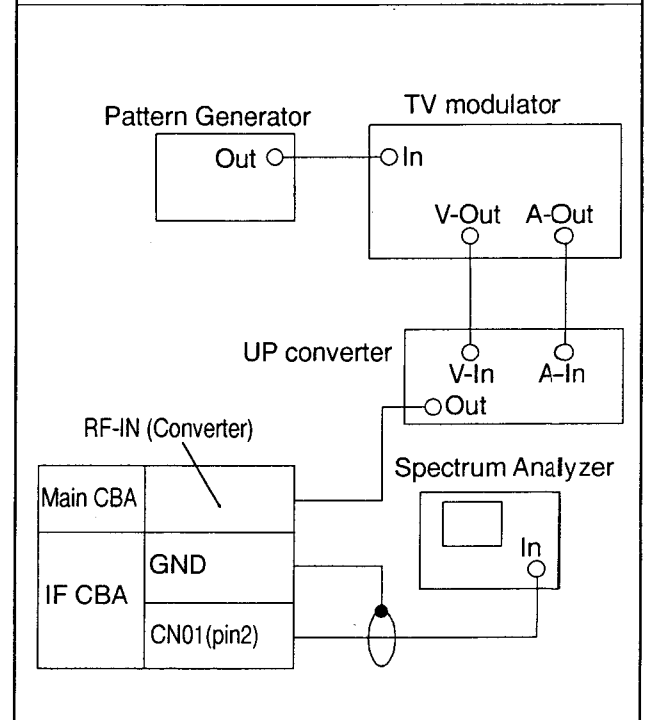
3-2. AFT Adjustment

Purpose: To adjust AFT effective rang which correct uncynchronized tuning after tuner preset.

Symptom of Misadjustment: May cause uncynchronized tuning after tuner preset.

Test Point	Adj. Point	Mode	Input
Pin2 of CN01	T01 (VCO)	---	Color Bar with 100% white
Tape	Measurement Equipment	Spec.	
---	TV modulator UP converter Pattern Generator Spectrum Analyzer	38.9MHz± 25kHz	

Connections of Measurement Equipment



Reference Notes:

Pin2 of CN01, T01 : IF CBA (IF Unit)

1. Set the tuner in preset mode then tune to the following frequency.
*Tuner reception frequency = 203.25MHz (VHF-H range)
*Electric field strength: 70dBμV
2. Cancel the preset mode.
3. Adjust core of Coil T01 so that the IF frequency becomes following value.
*IF frequency= 38.9MHz± 25kHz

Note: Set the range of Adjust Spectrum Analyzer 500kHz.

4. AGC Adjustment

Note: Install the IF unit in Main CBA.

Purpose: To adjust the strength of received air signal.

Symptom of Misadjustment: May cause noise or beat in the picture.

Test Point	Adj. Point	Mode	Input
Pin1 of CN01	VR01 (AGC)	—	Color Bar with 100% white
Tape	Measurement Equipment	Spec.	
—	TV modulator UP converter Pattern Generator DC Voltmeter	DC 1.8V±0.1V	

Connections of Measurement Equipment

The diagram illustrates the setup for measuring the AGC voltage. It includes a Pattern Generator, a TV modulator, an UP converter, an RF-IN (Converter), a Main CBA, an IF CBA, and a DC voltmeter. The connections are as follows:

- Pattern Generator Out → TV modulator In
- TV modulator V-Out → UP converter V-In
- TV modulator A-Out → UP converter A-In
- UP converter Out → RF-IN (Converter)
- RF-IN (Converter) → Main CBA
- Main CBA → IF CBA
- IF CBA GND → DC voltmeter (+)
- IF CBA CN01(pin1) → DC voltmeter (-)

Reference Notes:

Pin1 of CN01, VR01 : IF CBA (IF unit)

- Set the tuner in preset mode and tune to the following frequency.

*Tuner reception frequency = 203.25MHz
(VHF-H range)

*Electric field strength: 70dBμV

- Adjust VR01 so that the voltage of AGC becomes the following level.

*DC voltmeter level=DC 1.8V±0.1V

5. Sound Multiple Unit Adjustment

Notes:

- Output the color bar with 100% white from the video pattern generator, then make 87.5% modulation by the TV modulator.
- Output the 1kHz Stereo 100% signal from the sound generator, then set 27kHz deviation exactly by the sound generator.
- Set the sound generator to: Tone: 1kHz, Mode: Stereo.
- Set the TV up converter to 70dBμ, (203.25MHz) then set the channel.

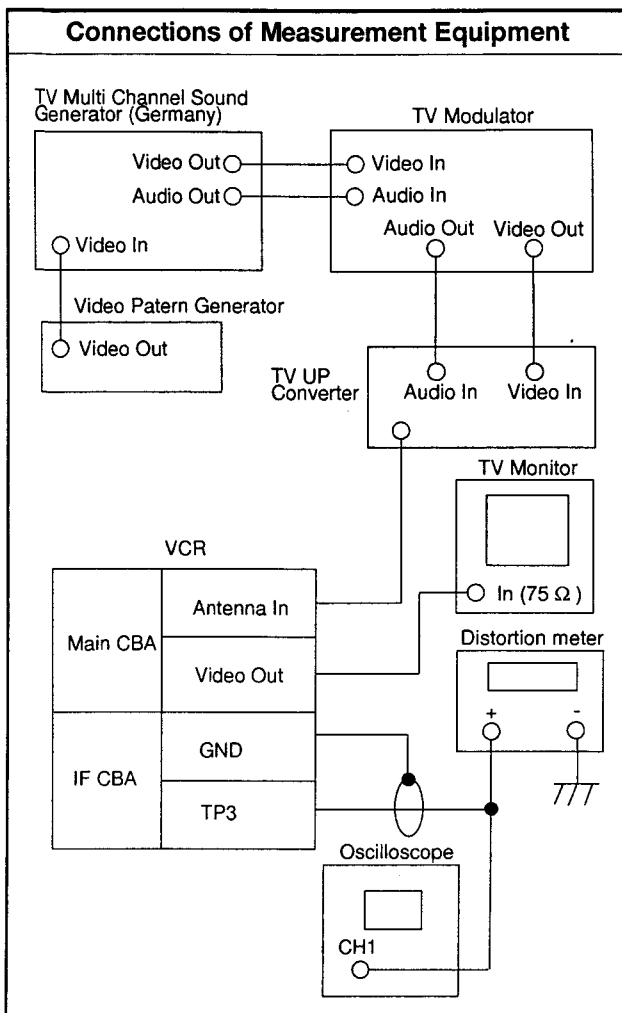
5-1. S2 Level Adjustment

Note: Install the IF unit in Main CBA.

Purpose: To minimize the audio distortion.

Symptom of Misadjustment: May cause audio distortion.

Test Point	Adj. Point	Mode	Input
Antenna In Video Out GND TP3	T31 (S2 LEVEL)	---	---
Tape	Measurement Equipment	Spec.	
---	TV monitor/ TV multi channel sound generator (Germany) / TV modulator/ UP converter/ Pattern Generator/ Oscilloscope/ Distortion meter		



Reference Note:

Antenna In, Video Out: Main CBA
TP3, T31: IF CBA (IF unit)

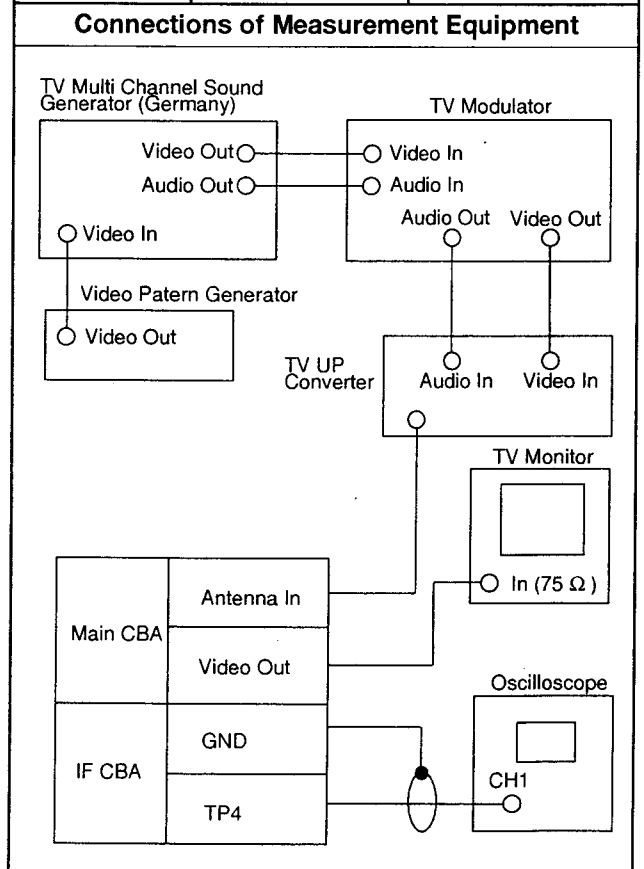
1. Set the tuner in preset mode and tune to the following frequency.
*Tuner reception frequency = 203.25MHz (VHF-H range)
*Electric field strength: 70dBμV
2. Adjust core of coil T31 so that the audio distortion becomes maximum level.

5-2. Pilot Adjustment

Purpose: To set the Stereo and Sound multiple distinct signal becomes maximum level.

Symptom of Misadjustment: If pilot adjustment is incorrect, Stereo and Sound multiple function may not distinct properly.

Test Point	Adj. Point	Mode	Input
Antenna In Video Out GND TP4	T41 (PILOT)	---	---
Tape	Measurement Equipment	Spec.	
---	TV monitor/ TV multi channel sound generator (Germany) / TV modulator/ UP converter/ Pattern Generator/ Oscilloscope		



Reference Note:

Antenna In, Video Out: Main CBA
TP4, T41: IF CBA (IF unit)

1. Set the tuner in preset mode and tune to the following frequency.

*Electric field strength: 70dB μ V

- ### 5-3. Output Level Adjustment

Symptom of Misadjustment: If output level adjustment is incorrect, Tuner (Sound multiple) audio level may not becomes properly.

Connections of Measurement Equipment



1. Set the tuner in preset mode and tune to the following frequency.

*Electric field strength: 70dB μ V

2. Set the TV multi channel sound generator (Germany) to:
Output R ch: off

- #### 5-4. Separation Adjustment

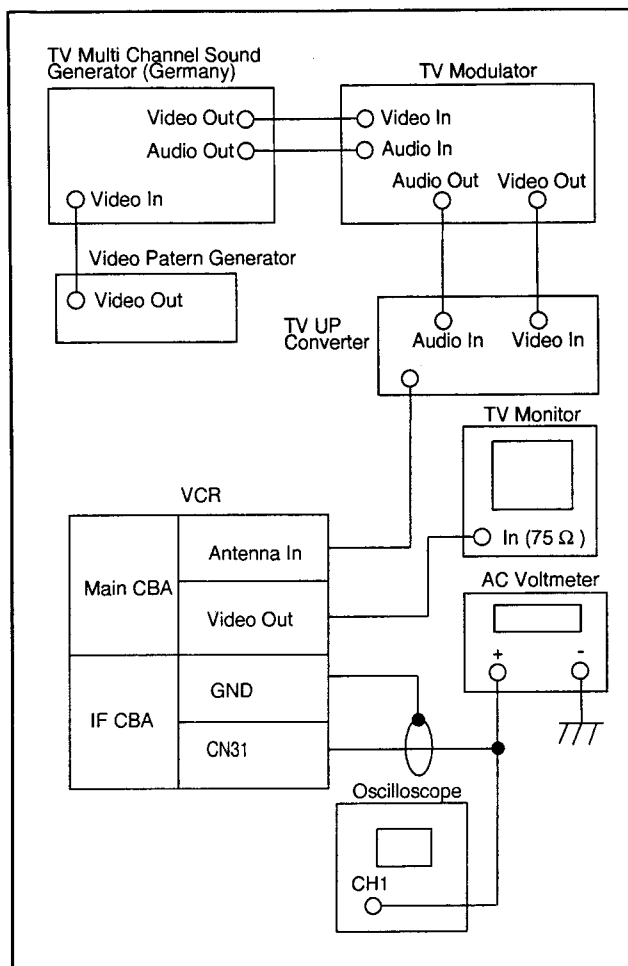
Caution: Do not attempt to do this adjustment without the specified equipment.

To set the audio output level of the tuner properly.

Symptom of Misadjustment:

Audio signal of L ch and R ch may be mixed under E-E and/or Rec mode.

Connections of Measurement Equipment



Reference Notes:

Antenna In, Video Out
CN31, VR31: IF CBA (IF unit)

1. Set the TV multi channel sound generator (Germany) to:
Output L ch: off
2. Adjust 2pin of CN31(L ch) so that the output signal becomes minimum level.
3. Check 1pin of CN31(R ch) so that the output signal becomes 250mVrms level.

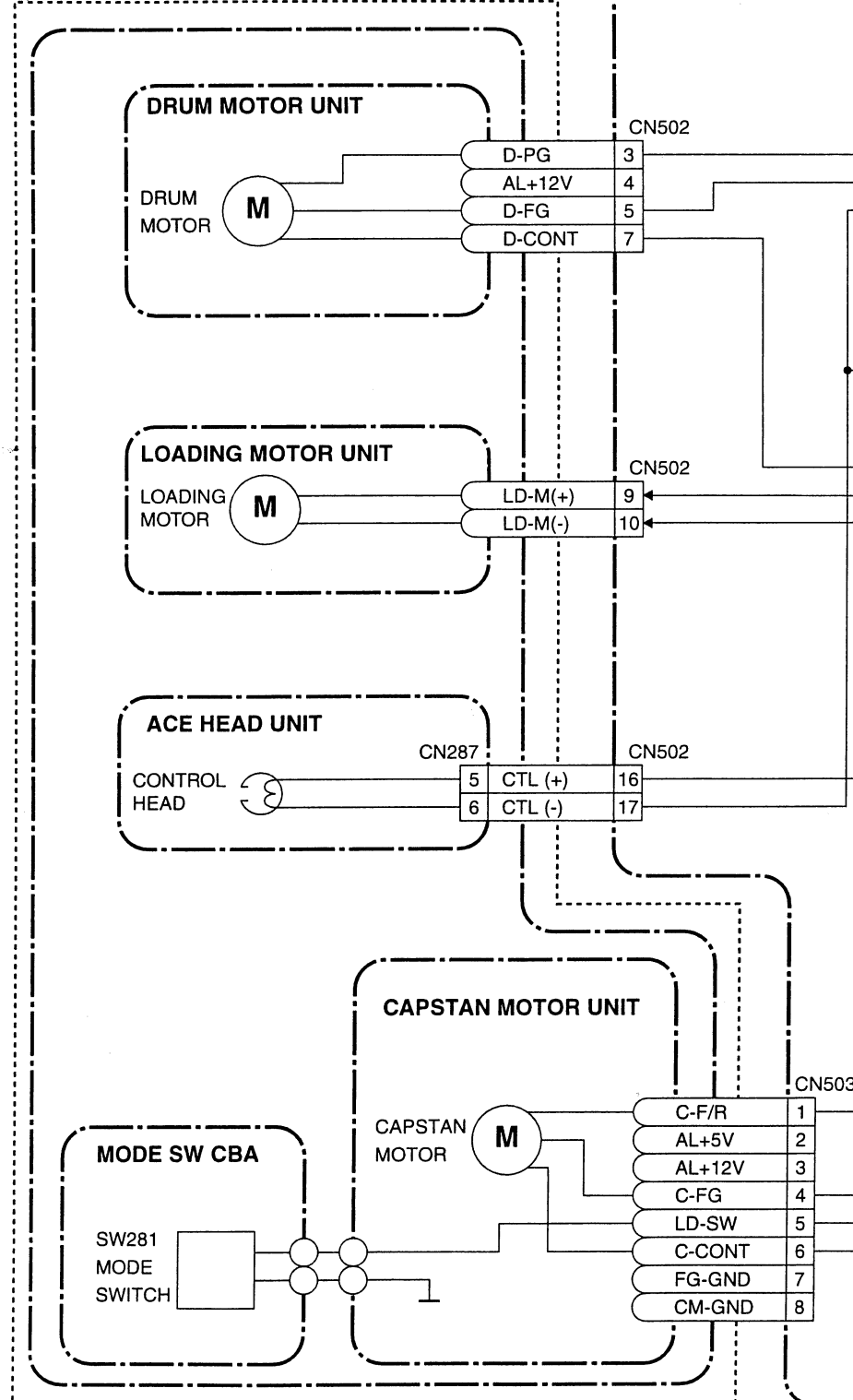
Servo/System Control Block Diagram (A, B)

BLOCK DIAGRAMS

Comparison Chart of Models and Marks

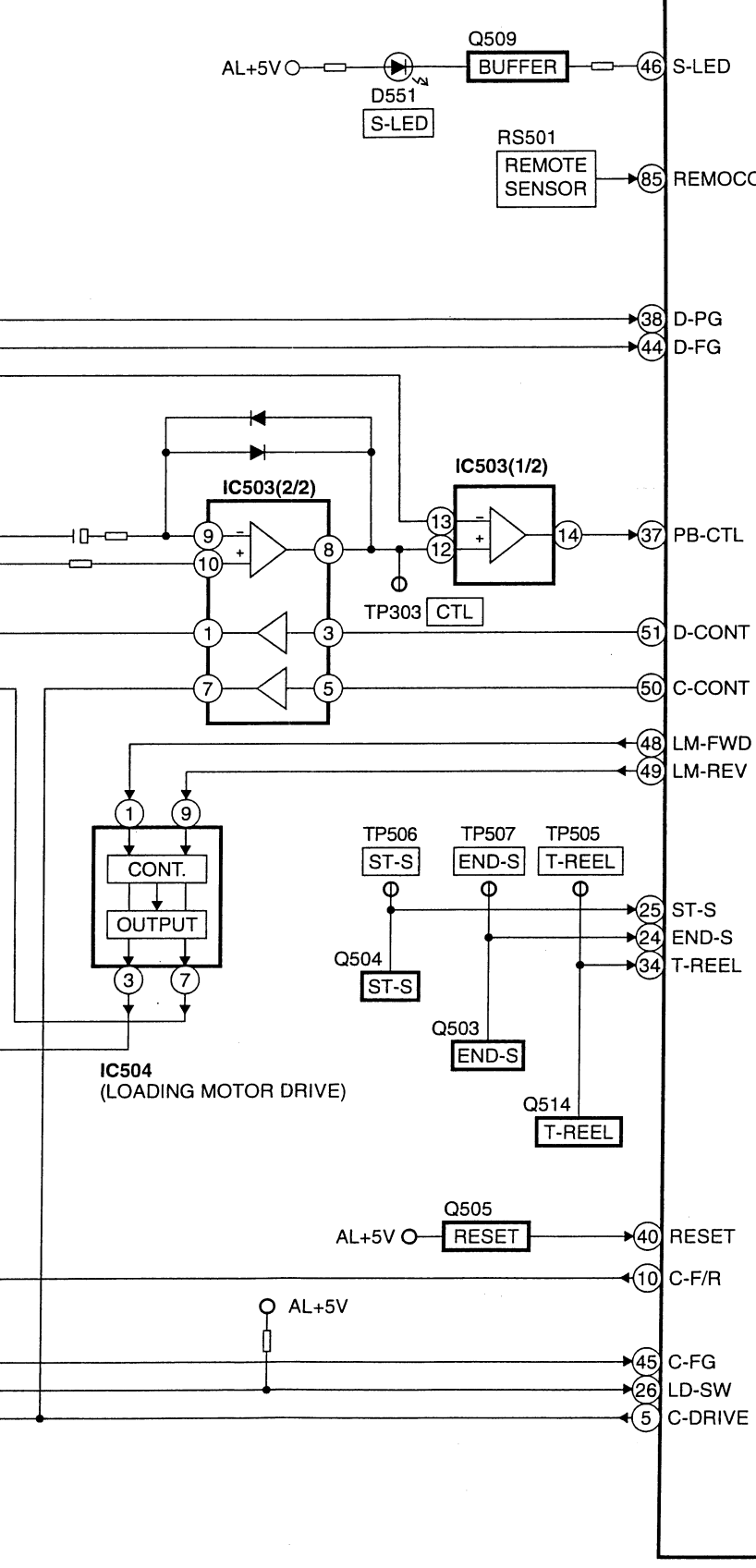
Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

(DECK MECHANISM)

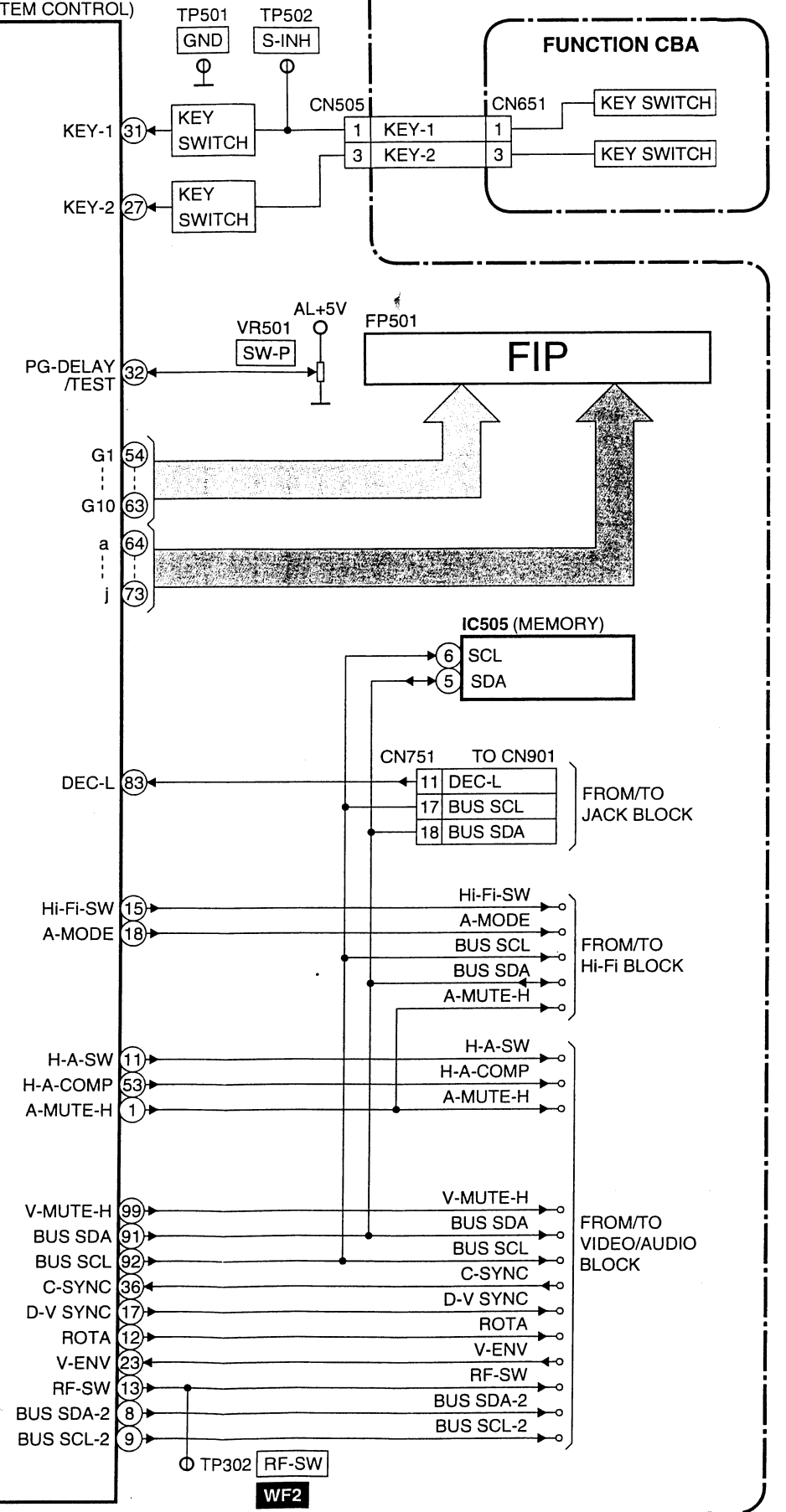


1-7-1

MAIN CBA



IC501 (SERVO/SYSTEM CONTROL)



1-7-2

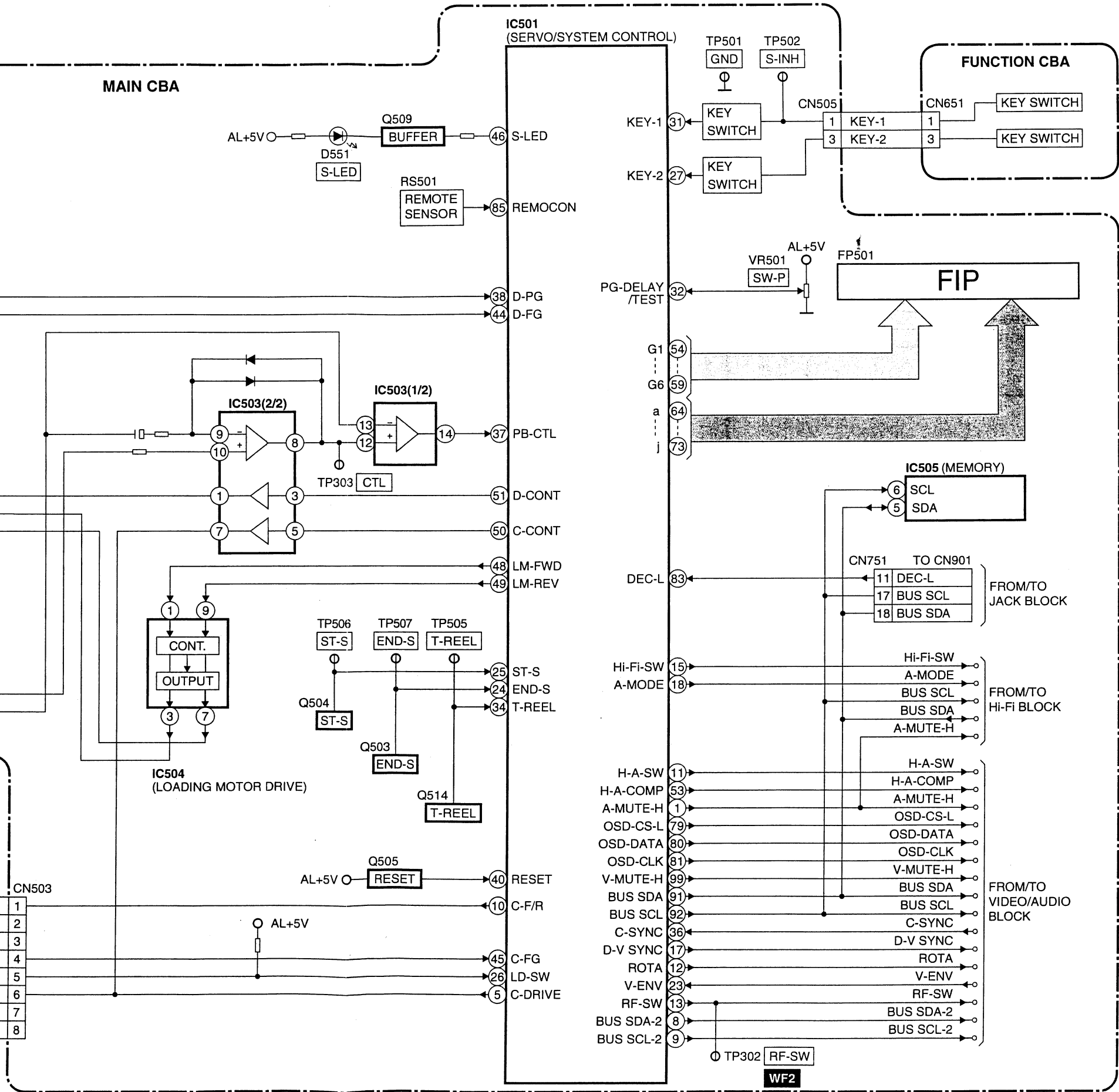
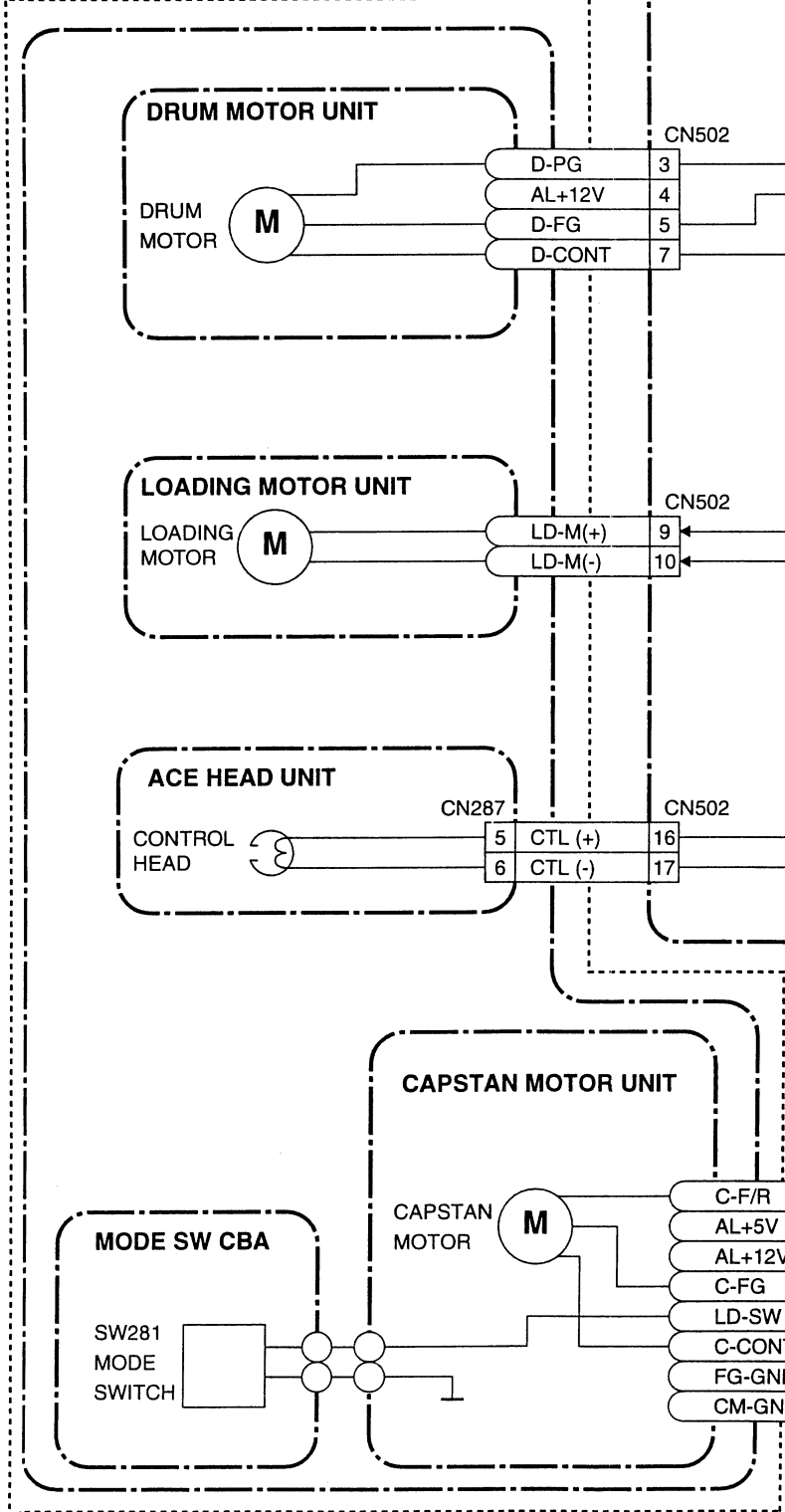
H4903 LS

Servo/System Control Block Diagram (C, D)

Comparison Chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

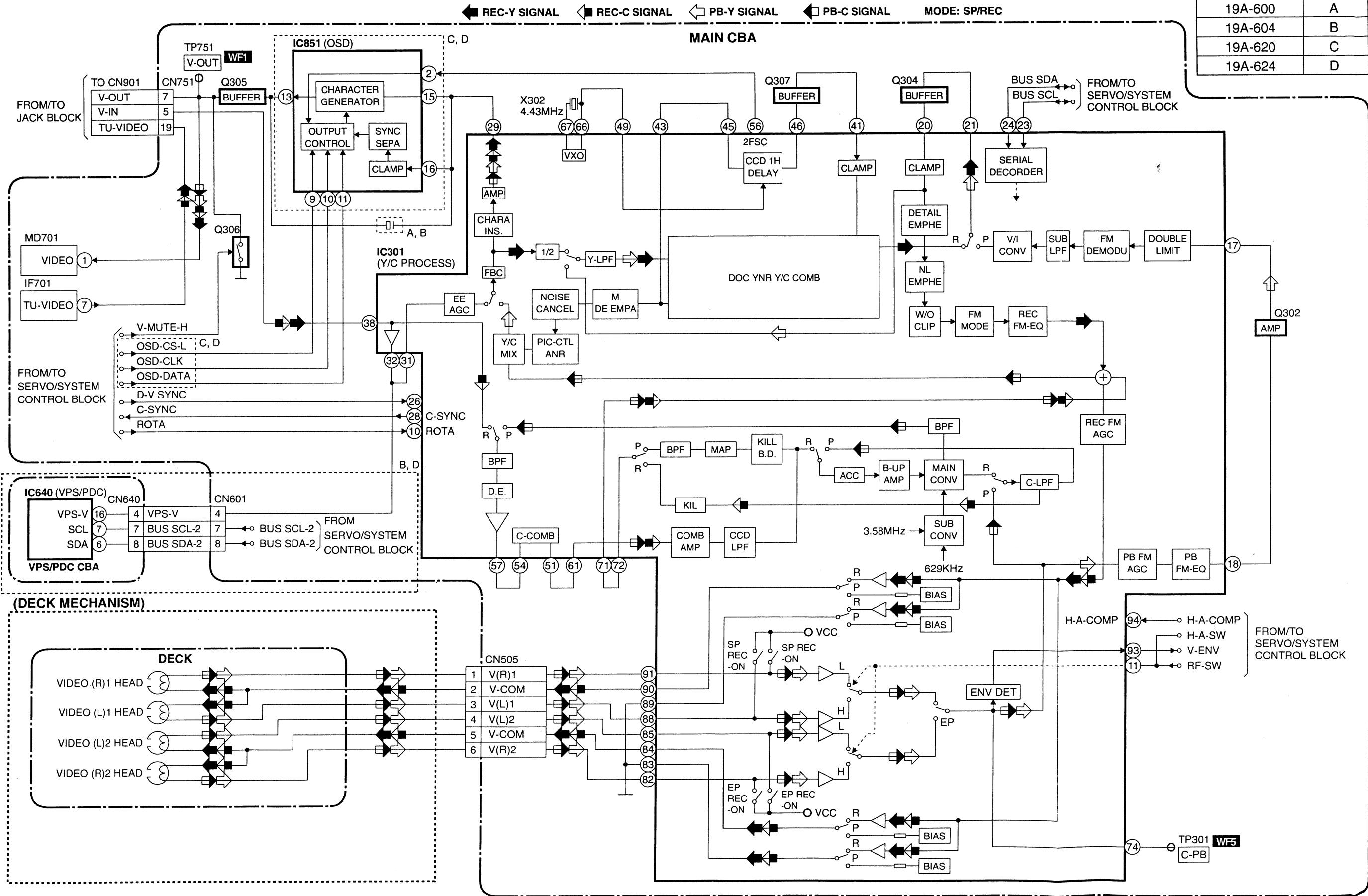
(DECK MECHANISM)



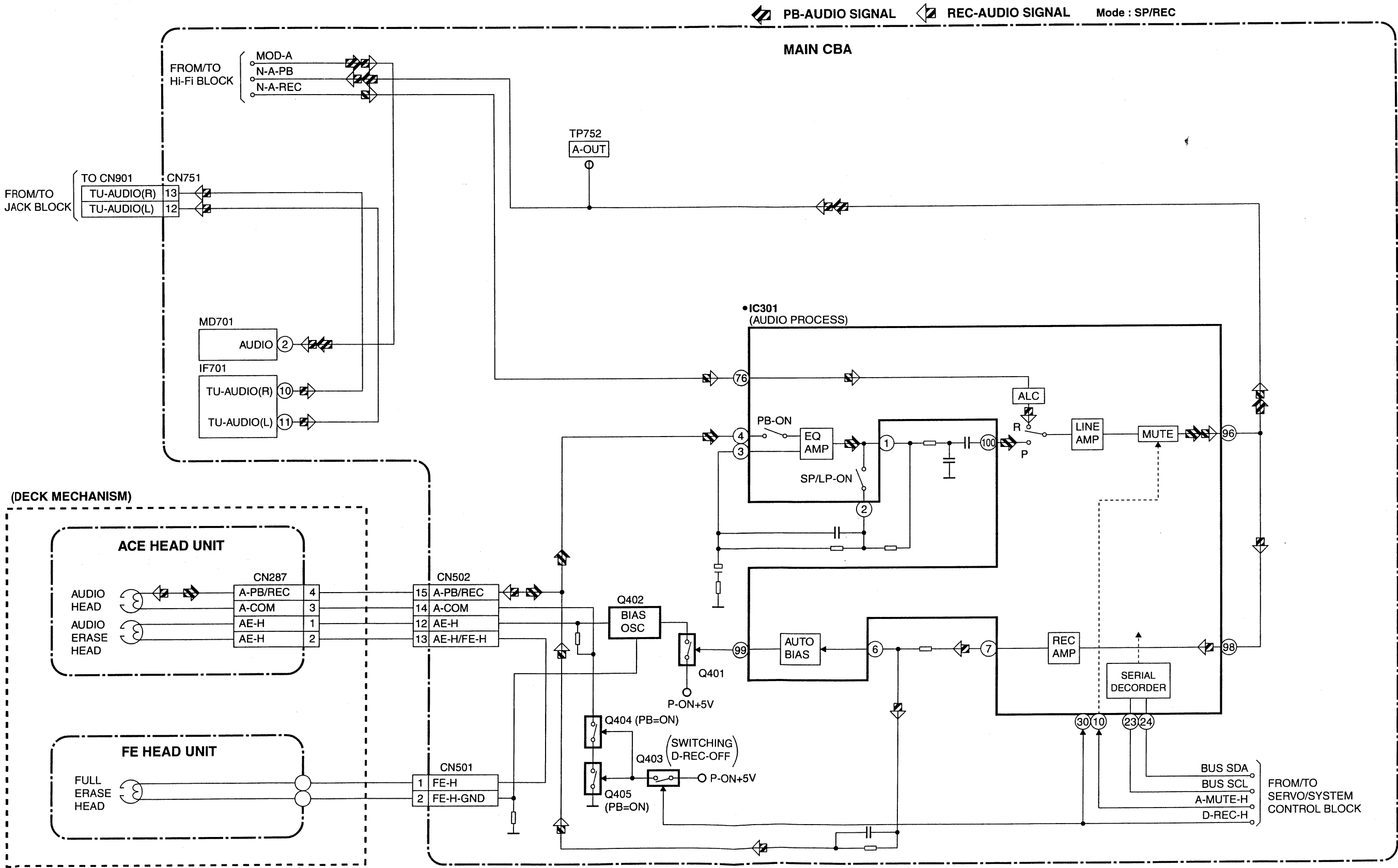
Video Block Diagram

Comparison Chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D



Audio Block Diagram

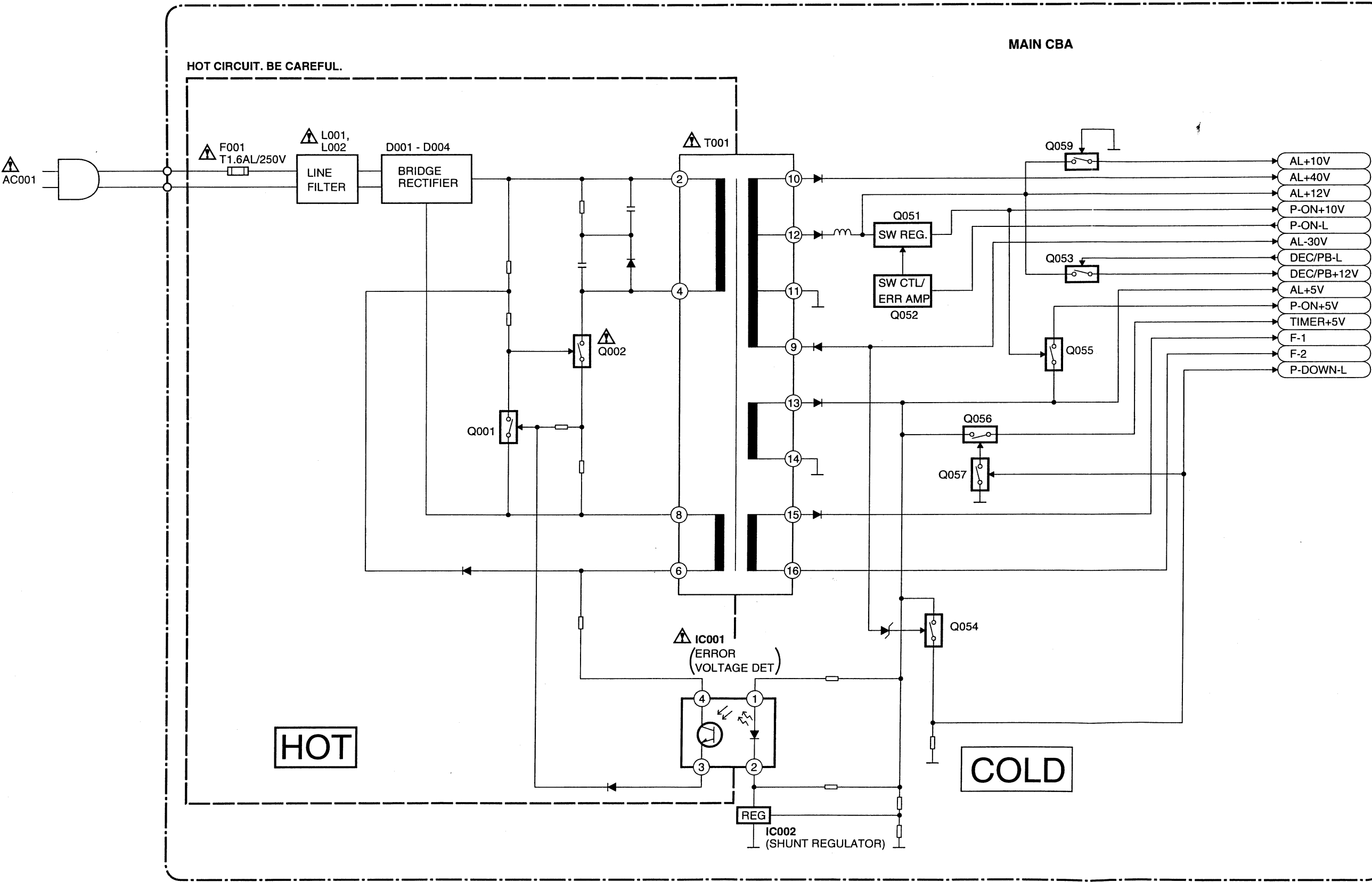


Power Supply Block Diagram

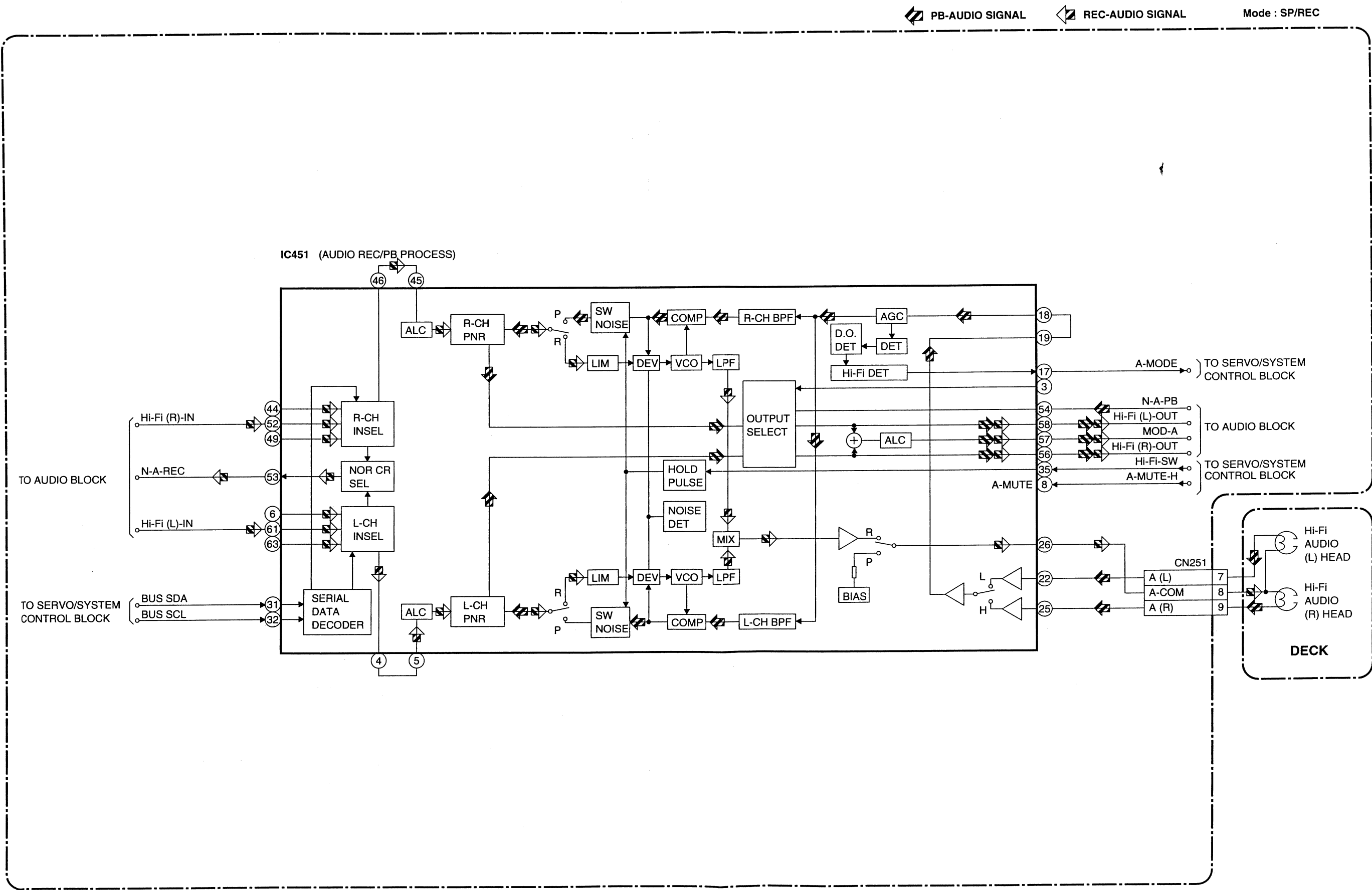
NOTE :
The voltage for parts in hot circuit is measured using
hot GND as a common terminal

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE T1.6AL/250V FUSE.

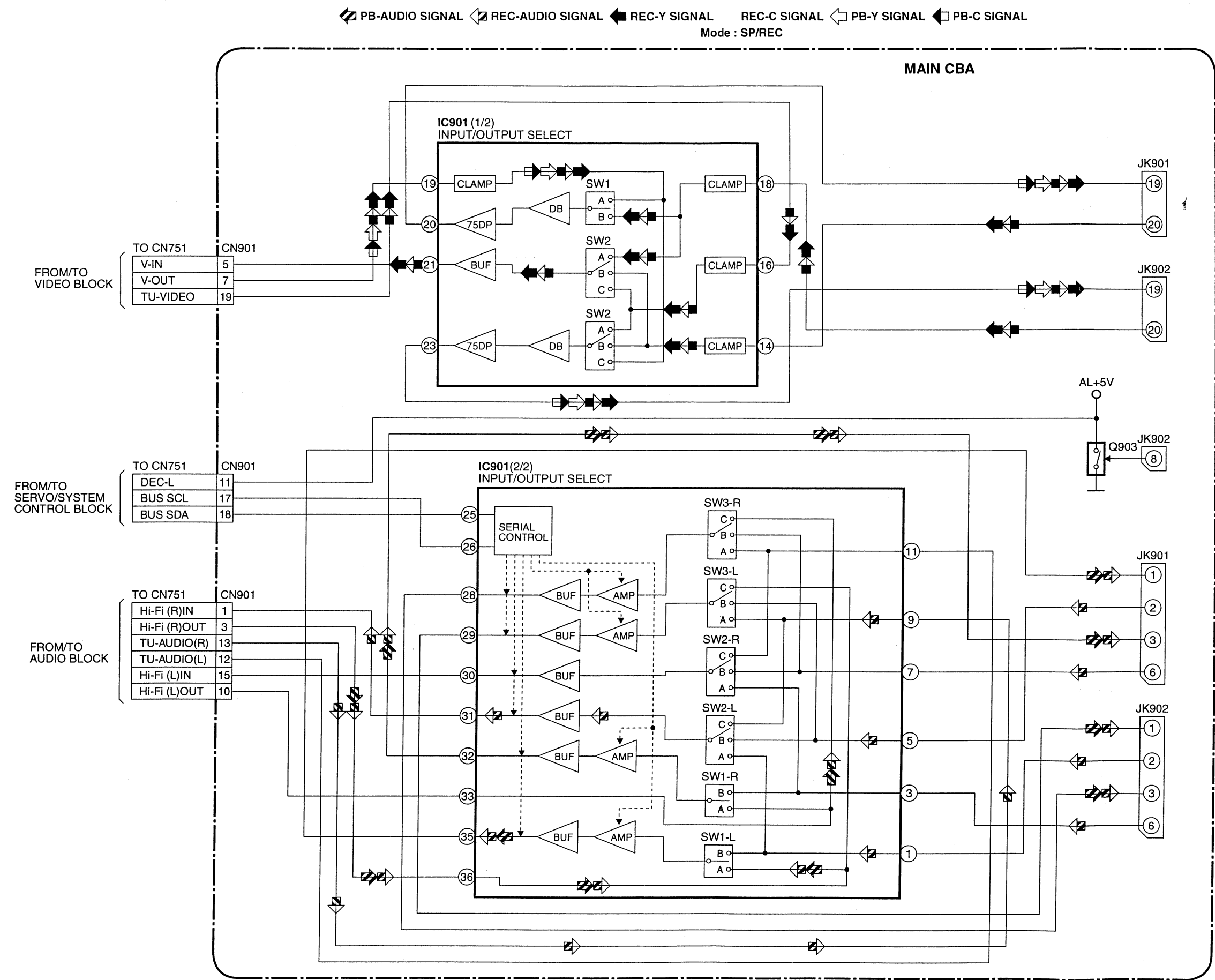
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F001) is blown, check to see that all components in the power supply
circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.



Hi-Fi Audio Block Diagram



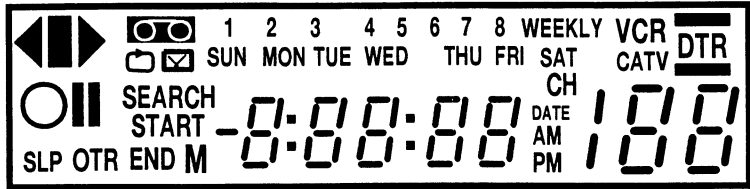
Jack Block Diagram



Function Indicator Symbols

Models: 19A-600/19A-604

Display panel



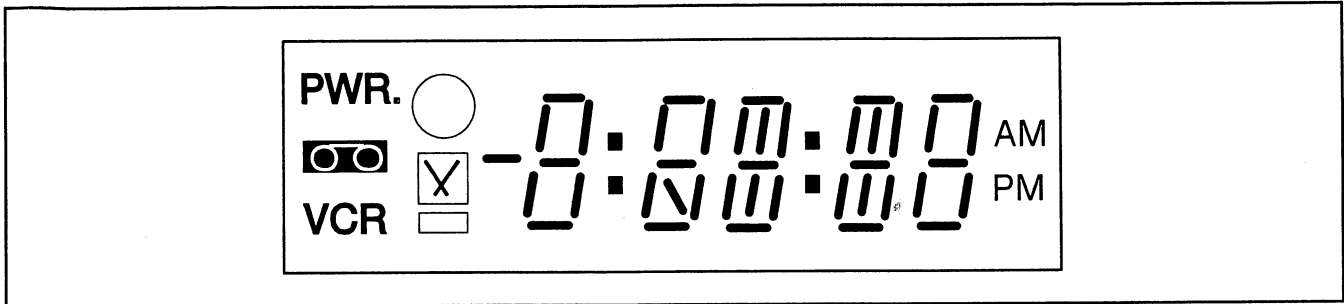
MODE	INDICATOR	
Cassette "IN"	" "	ON
Cassette "OUT"	" "	OFF
STOP	" "	ON
FF	" "	3.2Hz Blinks
REW	" "	3.2Hz Blinks
PLAY	" "	0.8Hz
PLAY PAUSE	" "	ON
N. CANCEL	" "	ON
FS PLAY	" "	1.6Hz Blinks
RS Reverse Rotation PLAY	" "	1.6Hz Blinks
REC	" "	ON
	" "	0.8Hz Blinks
REC PAUSE	" "	ON
	" "	ON
Counter Memory "ON"	"M"	ON
Counter Memory "OFF"	"M"	OFF
Tape Speed	SP	"SP" ON
	LP	"LP" ON
TIMER REC	" "	ON
	" "	0.8Hz Blinks
	" "	ON
OTR	" "	ON
	" "	0.8Hz Blinks
	"OTR"	ON
REPEAT PLAY "OFF"	" "	OFF
REPEAT PLAY "ON"	" "	ON
AUTO TRACKING	"DTR"	ON
Done	"DTR"	Blinks
In Search	"DTR"	OFF
Manual	"DTR"	OFF
AUTO RETURN	" "	3.2Hz
	" "	0.8Hz
When Reel Mechanism is not functioning correctly	" "	0.8Hz Blinks
Capstan Mechanism is not functioning correctly	"CH NO.1	0.8Hz Blinks
When Tape Loading Mechanism is not functioning correctly	" "	0.8Hz Blinks
	"CH NO.2	0.8Hz Blinks
When Cassette Loading Mechanism is Not Functioning Correctly	" "	0.8Hz Blinks
	"CH NO.3	0.8Hz Blinks
When the Drum is not working properly	" "	0.8Hz Blinks
	"CH NO.4	0.8Hz Blinks
S-INH CONDITION	ALL MODE	Blinks at 0.8Hz interval

Models: 19A-620/19A-624

Note:

The following symbols will appear on the indicator panel to indicate the current mode or operation of the VCR. On-Screen modes will also be momentarily displayed on the TV screen when you press the operation buttons.

Display panel



" H " = LED Light on, " L " = LED Light off

LED MODE	INDICATOR ACTIVE	
CASSETTE " IN "	" "	ON
CASSETTE " OUT "	" "	OFF
CLOCK	" 88:88 "	ON
POWER ON	" PWR "	ON
REC	" "	ON
REC PAUSE	" "	Blinks at 0.8Hz interval
T-REC, OTR	" "	ON
	" "	(T-REC OFF, T-REC incomplete Blinks at 0.8Hz interval)
AUTO RETURN	" "	Blinks at 0.8Hz interval
VPS/PDC " ON "	" "	ON
VPS/PDC " OFF "	" "	OFF
When reel and capstan mechanism is not functioning correctly	" "	Blinks at 0.8Hz interval
	" 1 "	
When tape loading mechanism is not functioning correctly	" "	Blinks at 0.8Hz interval
	" 2 "	
When cassette loading mechanism is not functioning correctly	" "	Blinks at 0.8Hz interval
	" 3 "	
When the drum is not working properly	" "	Blinks at 0.8Hz interval
	" 4 "	
S-INH condition	All modes	Blinks at 0.8Hz interval

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " Δ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

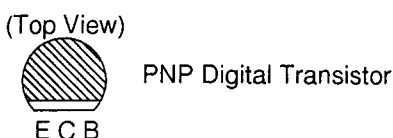
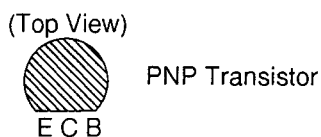
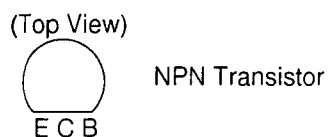
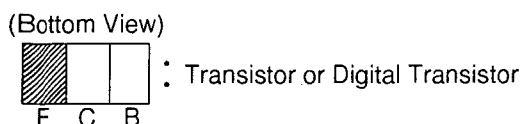
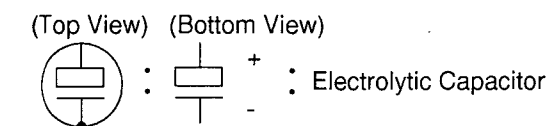
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	$\pm 10\%$	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	$\pm 15\%$	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Note:

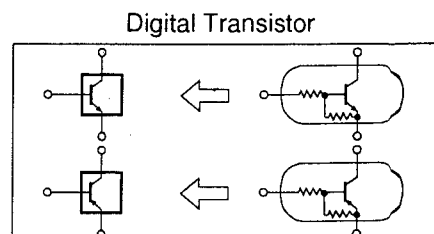
1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

Capacitors and transistors are represented by the following symbols.

CBA Symbols



Schematic Diagram Symbols



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.

If Main Fuse (F001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

- (1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
- (2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

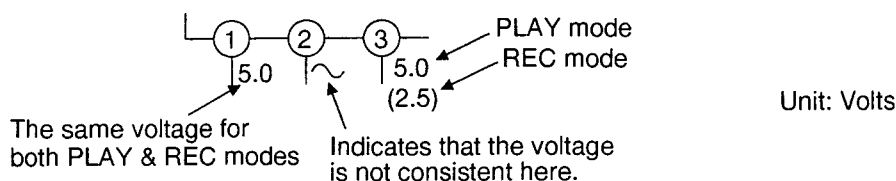
4. Wire Connectors

- (1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
- (2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).

5. Note: Mark "•" is a leadless (chip) component.

6. Mode: SP/REC

7. Voltage indications for PLAY and REC modes on the schematics are as shown below:

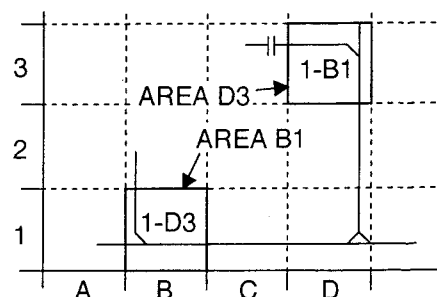


8. How to read converged lines

1-D3
 ↑
 Distinction Area
 Line Number
 (1 to 3 digits)

Examples:

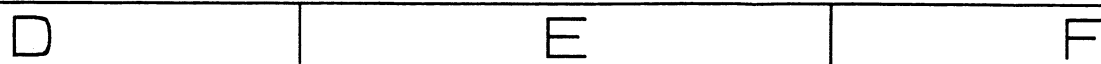
1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



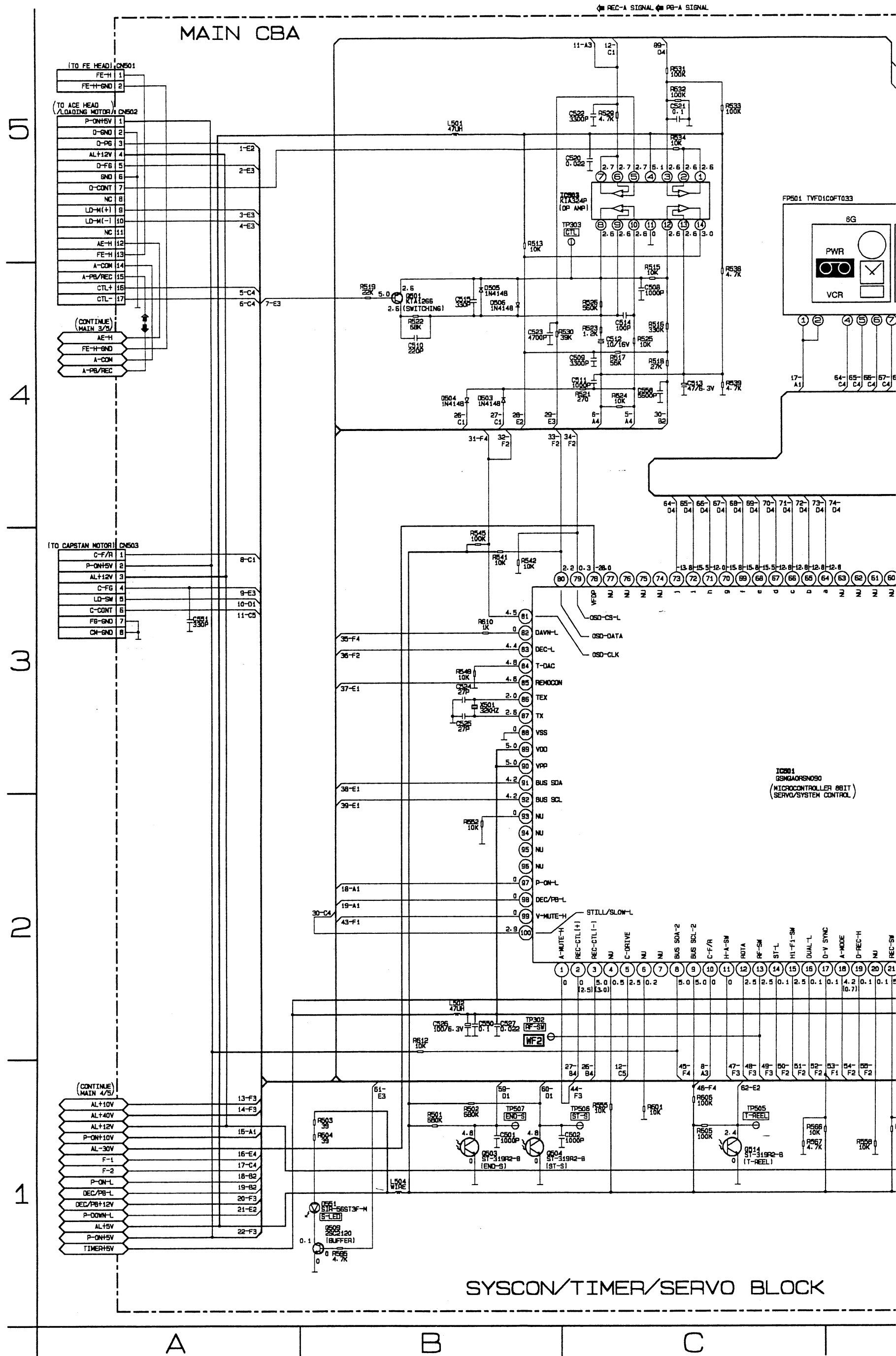
9. Test Point Information

- ⊕ : Indicates a test point with a jumper wire across a hole in the PCB.
- : Used to indicate a test point with a component lead on foil side.
- ⊗ : Used to indicate a test point with no test pin.
- : Used to indicate a test point with a test pin.

MODEL	MARK
19A-700	A
19A-704	B
19A-720	C
19A-724	D

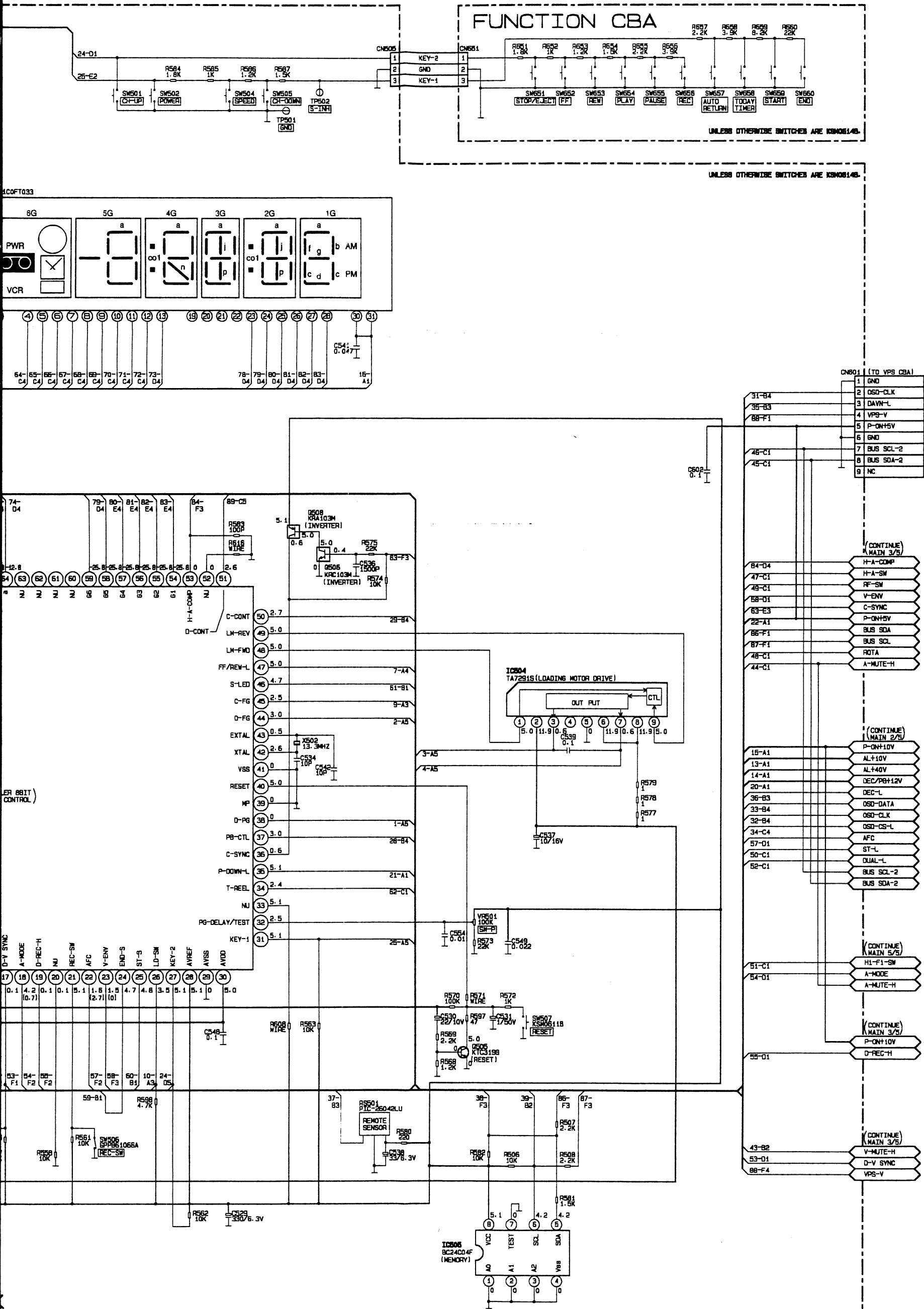


Main 1/5 Schematic Diagram (C, D)



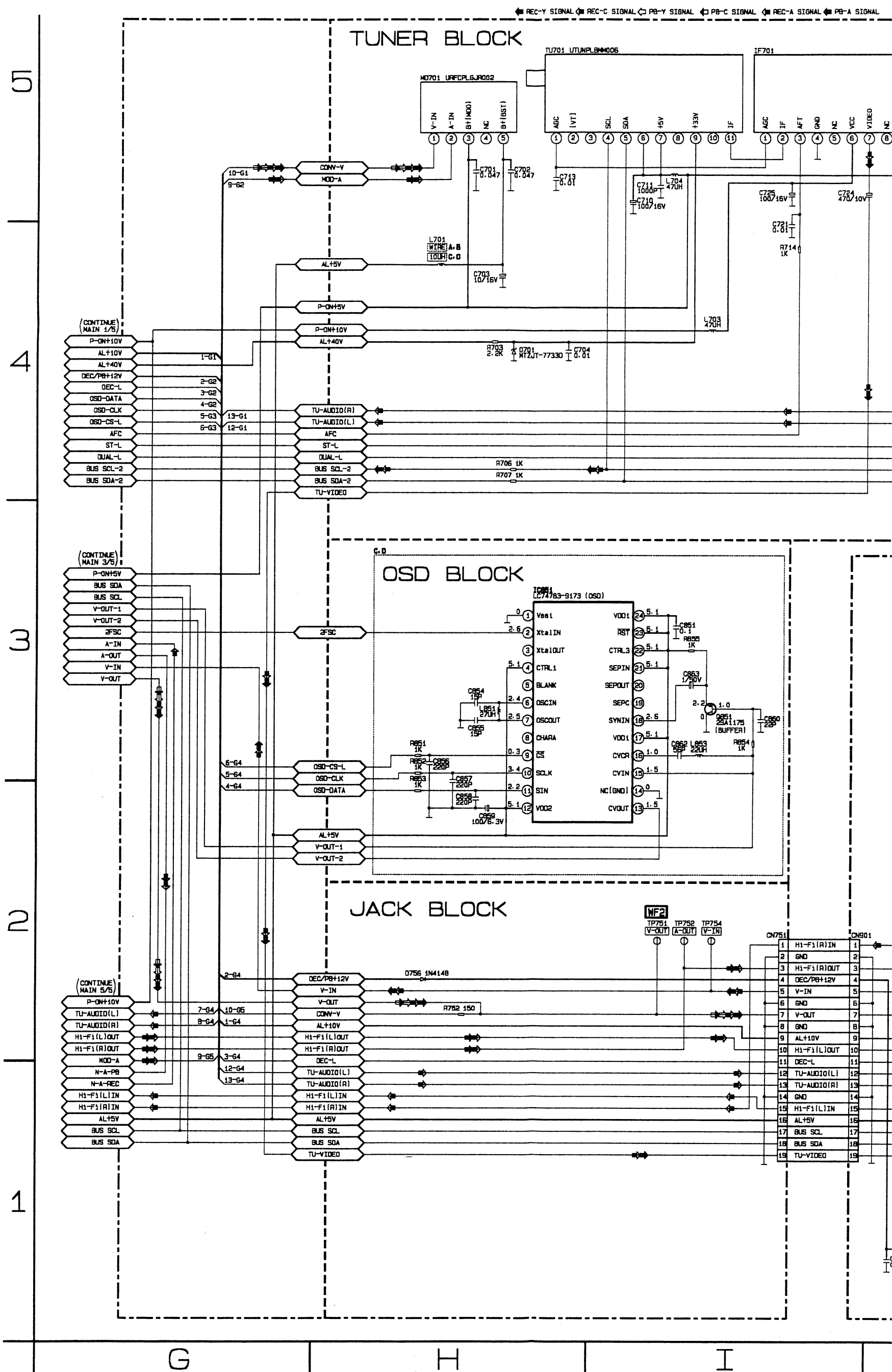
Comparison Chart of Models and Marks

MODEL	MARK
19A-700	A
19A-704	B
19A-720	C
19A-724	D



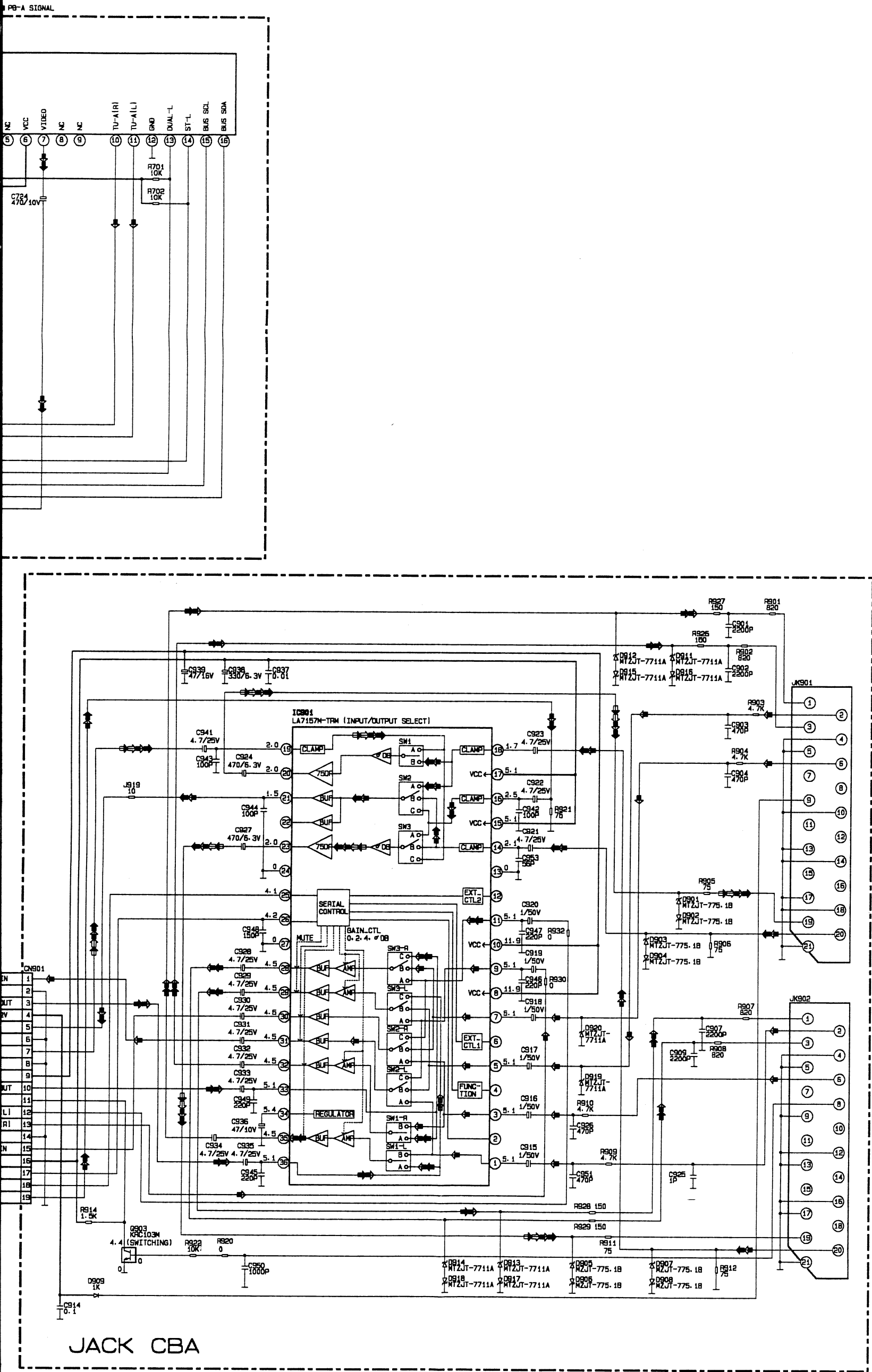
D I E F

Main 2/5 Schematic Diagram



Comparison Chart of Models and Marks

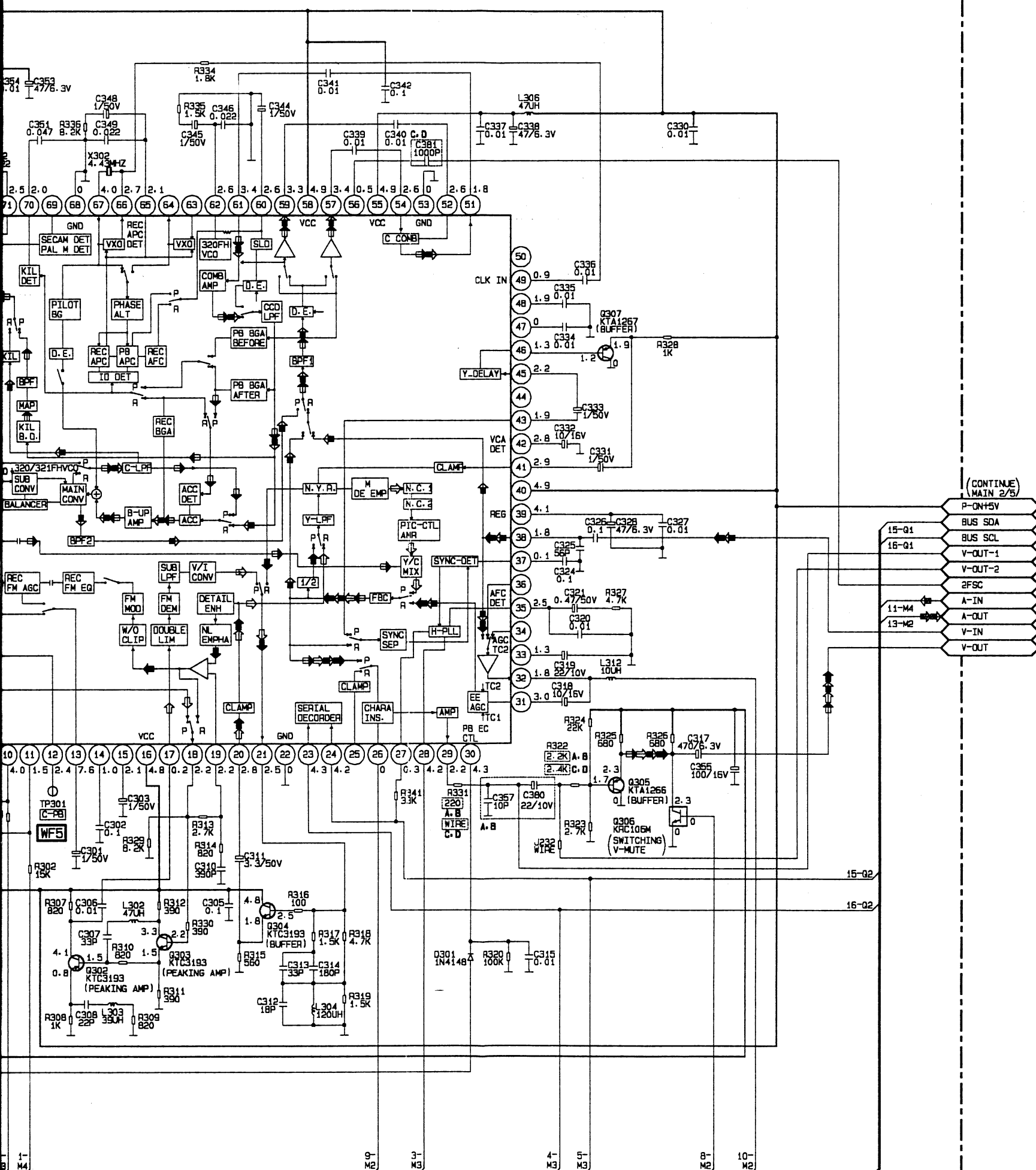
MODEL	MARK
19A-700	A
19A-704	B
19A-720	C
19A-724	D



1



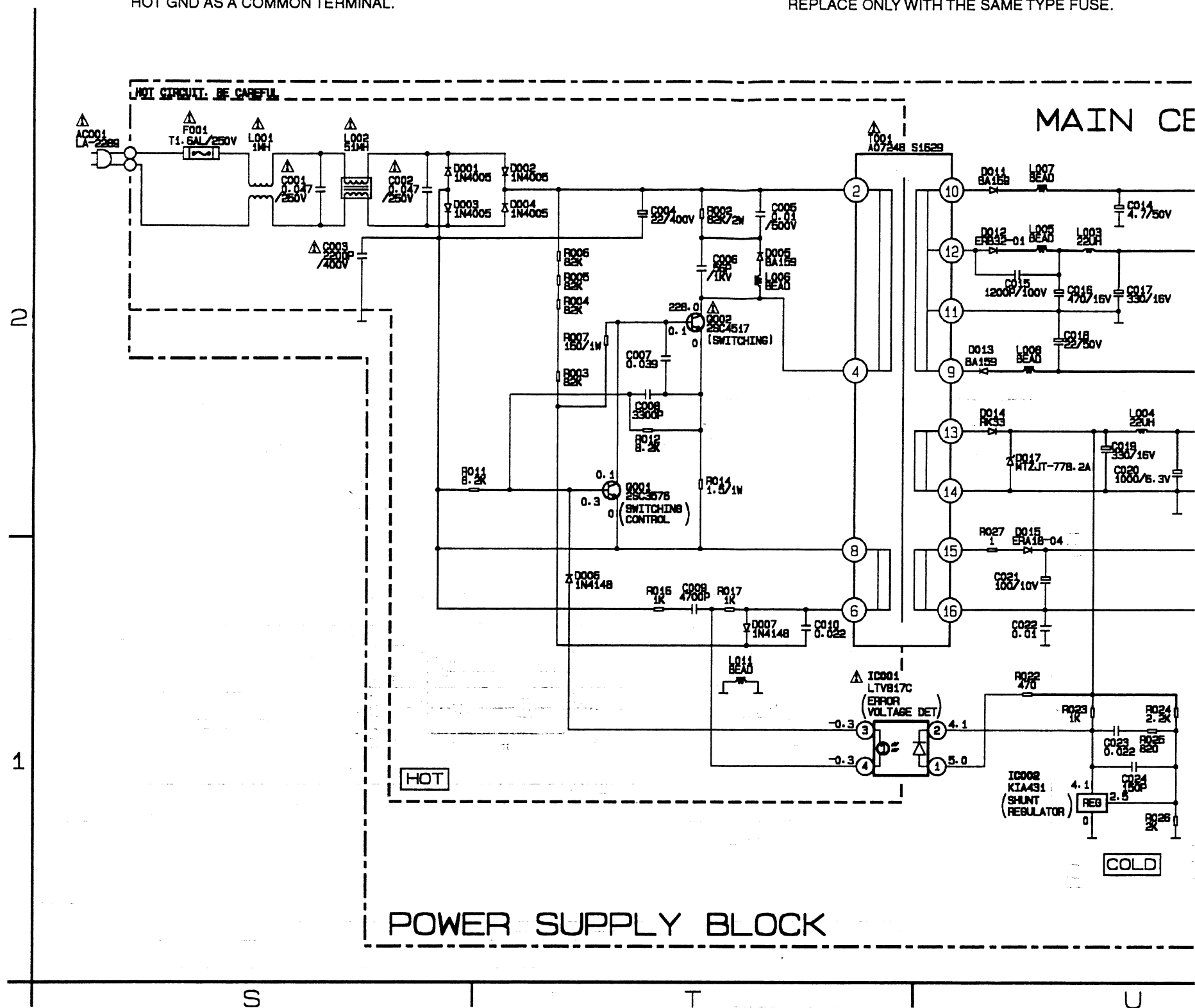
MODEL	MARK
19A-700	A
19A-704	B
19A-720	C
19A-724	D



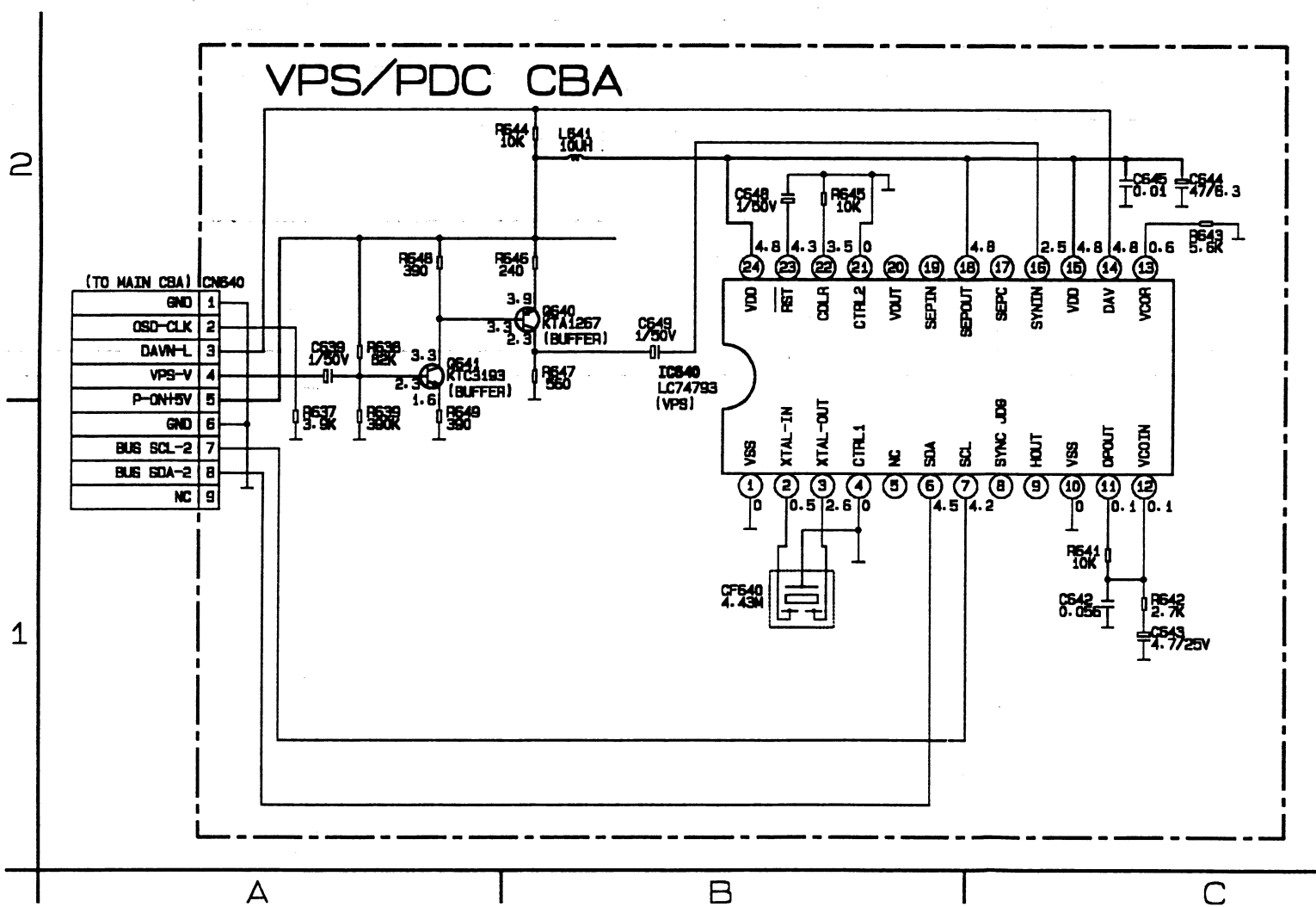
Main 4/5 Schematic Diagram

NOTE :
THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING
HOT GND AS A COMMON TERMINAL.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE.



VPS/PDC Schematic Diagram (B, D)

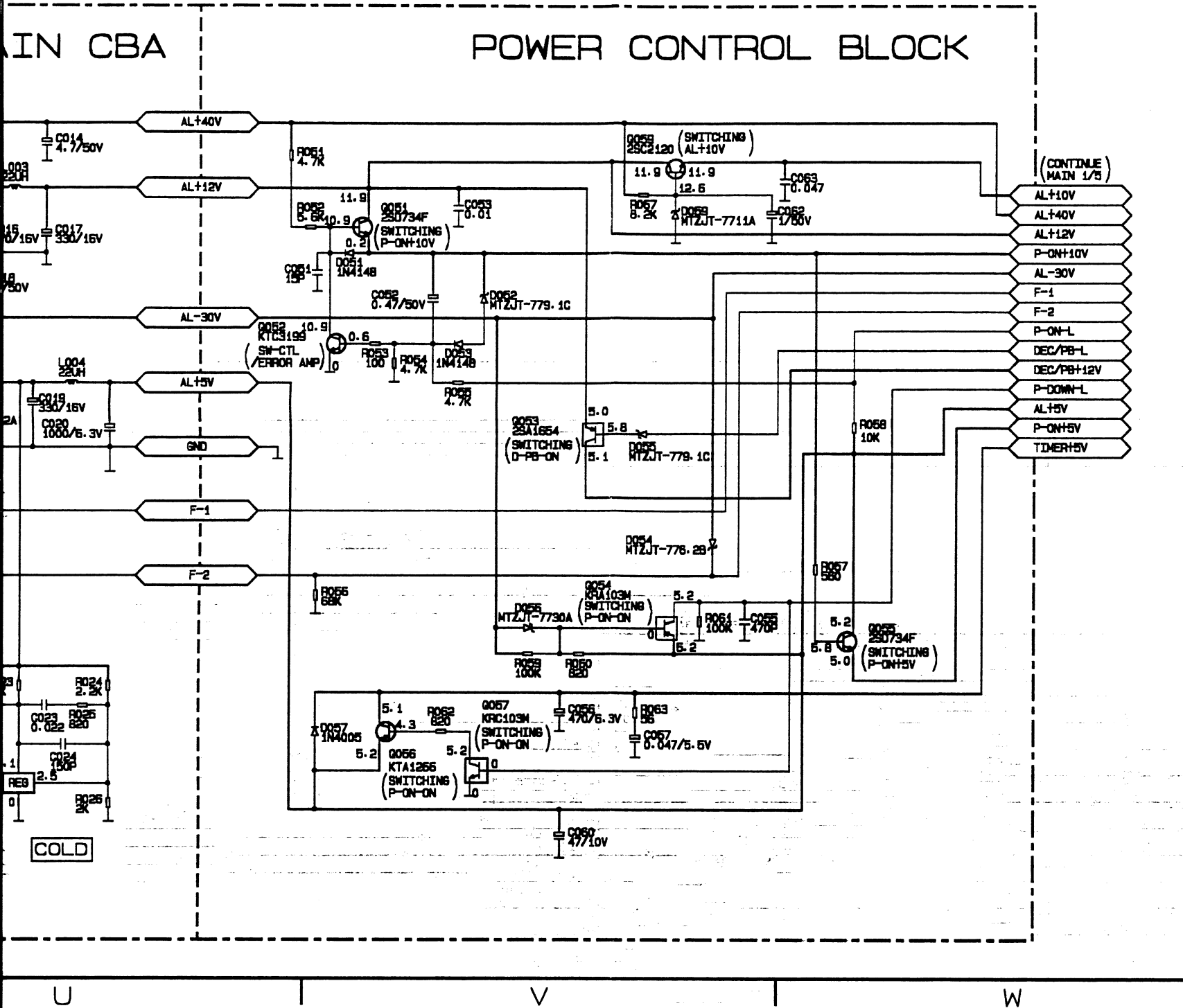


H4900SCVP

NOT FIRE HAZARD,
USE.

CAUTION !

Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F001) is blown, check to see that all components in the power supply
circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.



Comparison chart of Models and Marks

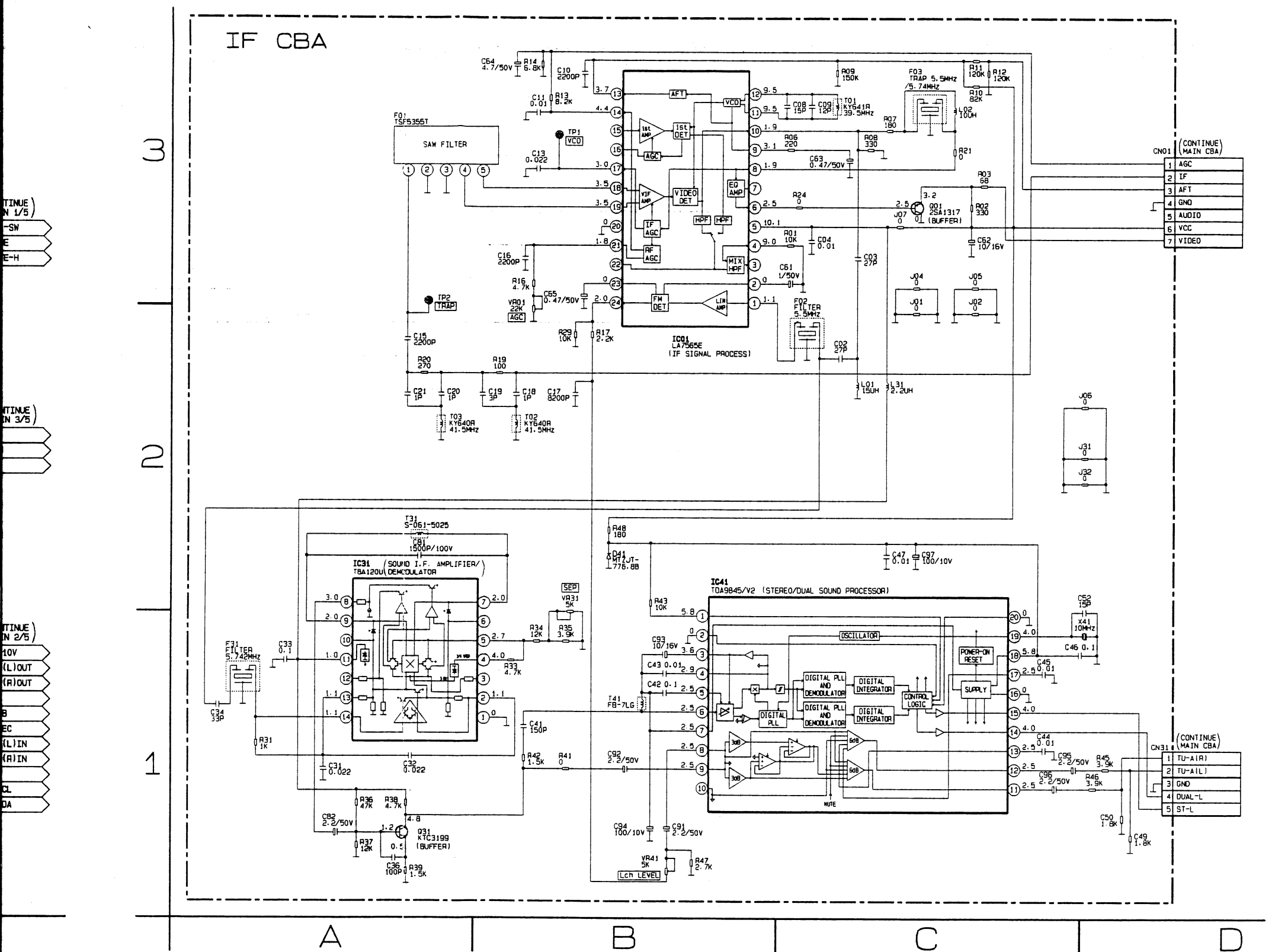
Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

H4900SCM5

3



IF Schematic Diagram



H4900SCMIF

Main CBA Top View

NOTE :

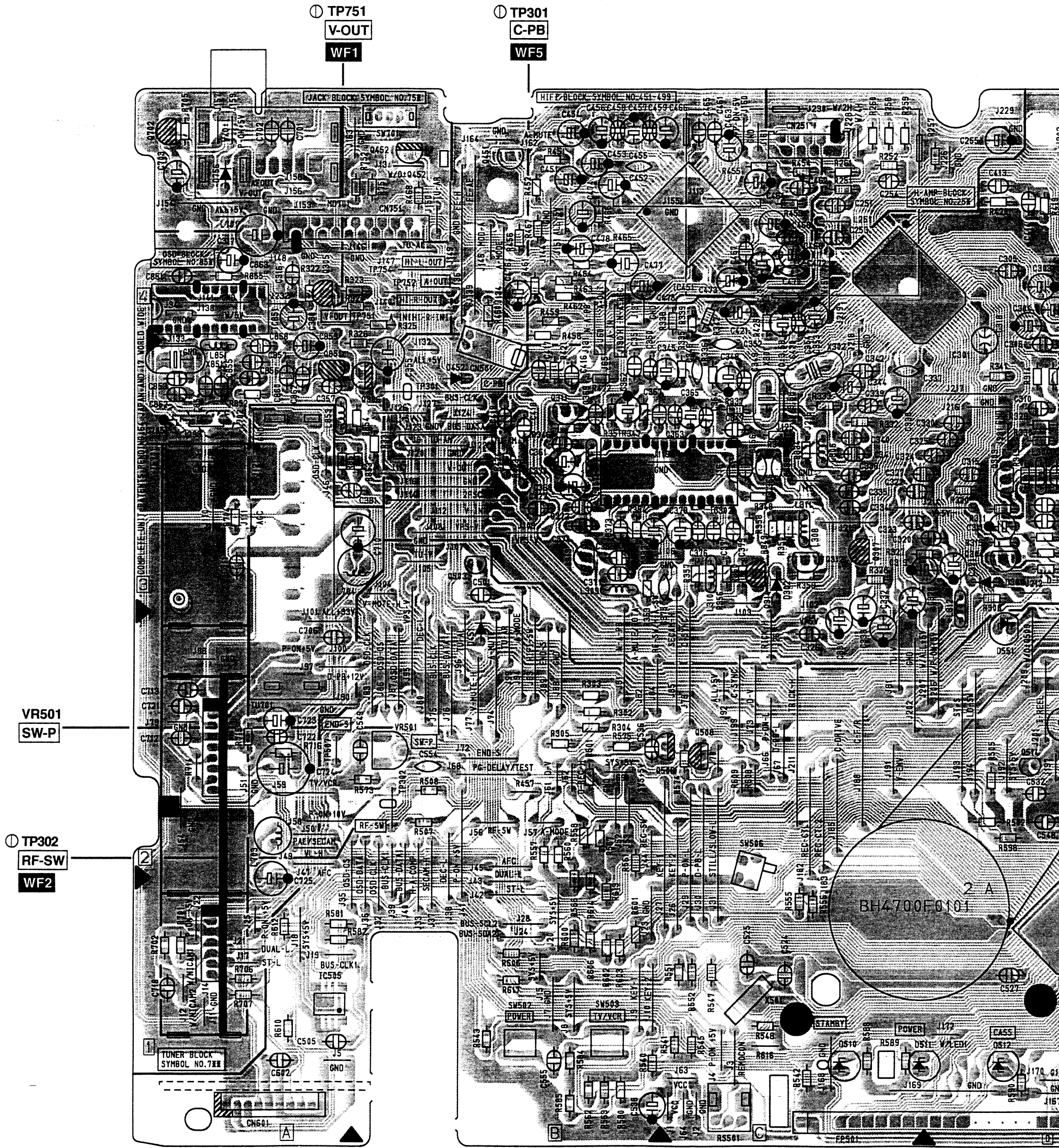
THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING HOT GND AS A COMMON TERMINAL.

CAUTION

FOR CONTINUED

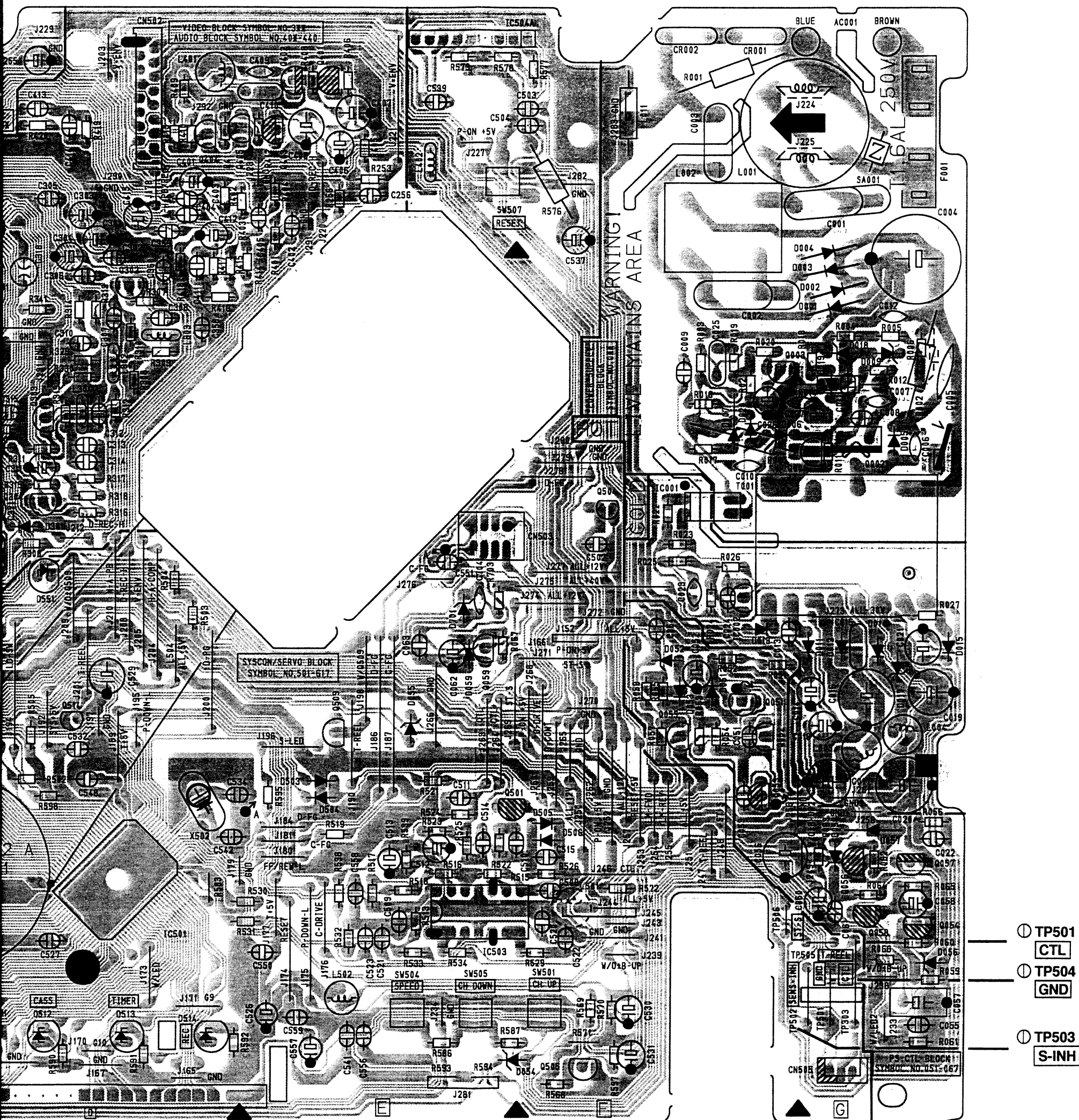
REPLACE ONLY V

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



CAUTION
 FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
 REPLACE ONLY WITH THE SAME TYPE FUSE.

CAUTION !
 Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
 If Main Fuse (F001) is blown, check to see that all components in the power supply
 circuit are not defective before you connect the AC plug to the AC power supply.
 Otherwise it may cause some components in the power supply circuit to fail.



Main CBA Bottom View

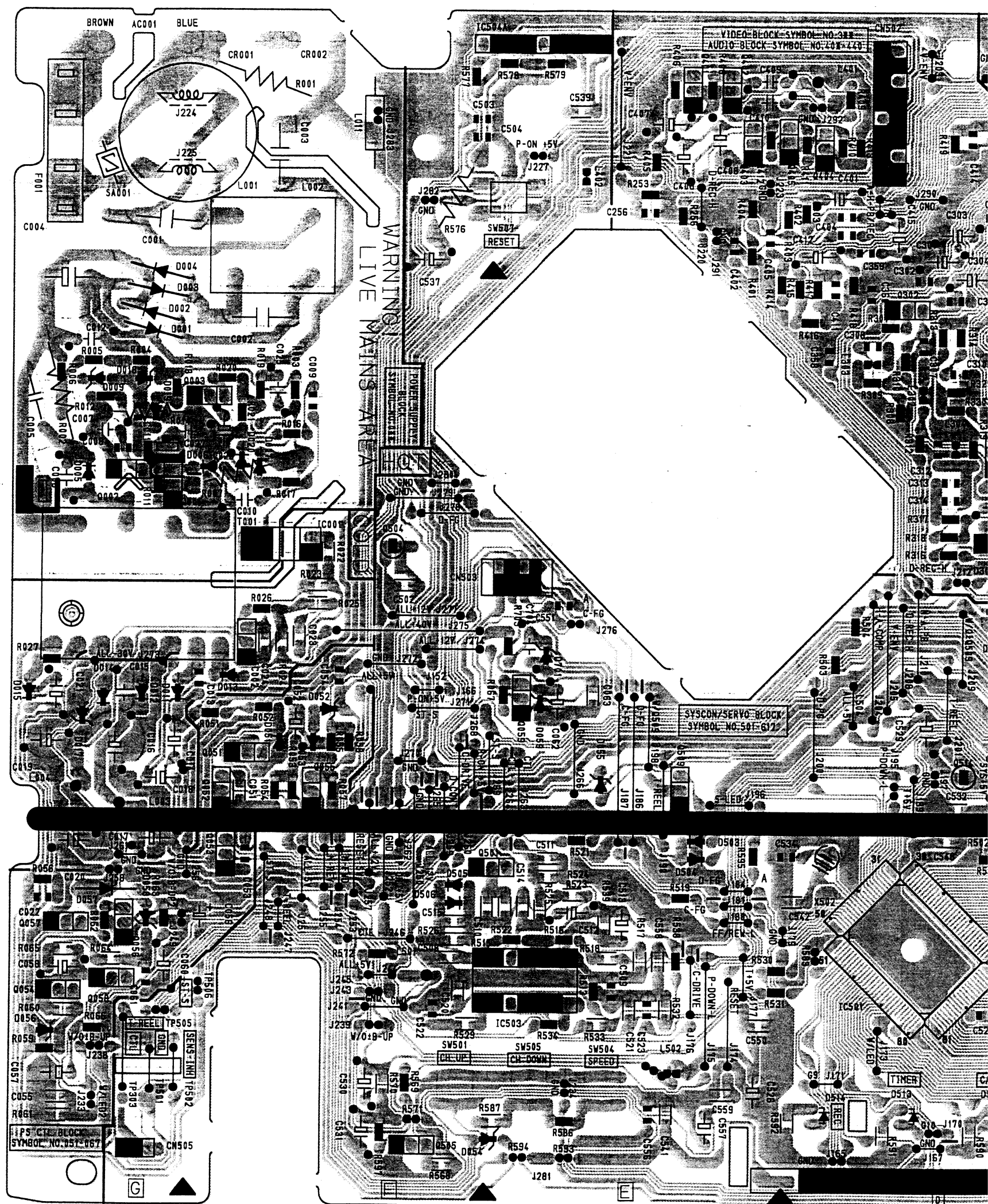
NOTE :

THE VOLTAGE FOR PARTS IN HOT CIRCUIT IS MEASURED USING HOT GND AS A COMMON TERMINAL.

CAUTION

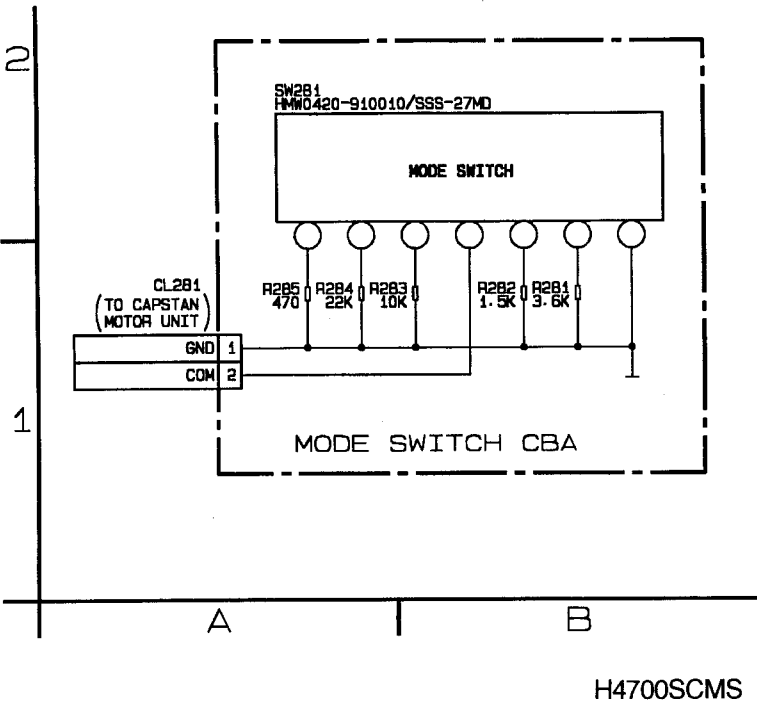
FOR CONTINUED PROTECTION AGAINST
REPLACE ONLY WITH THE SAME TYPE

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

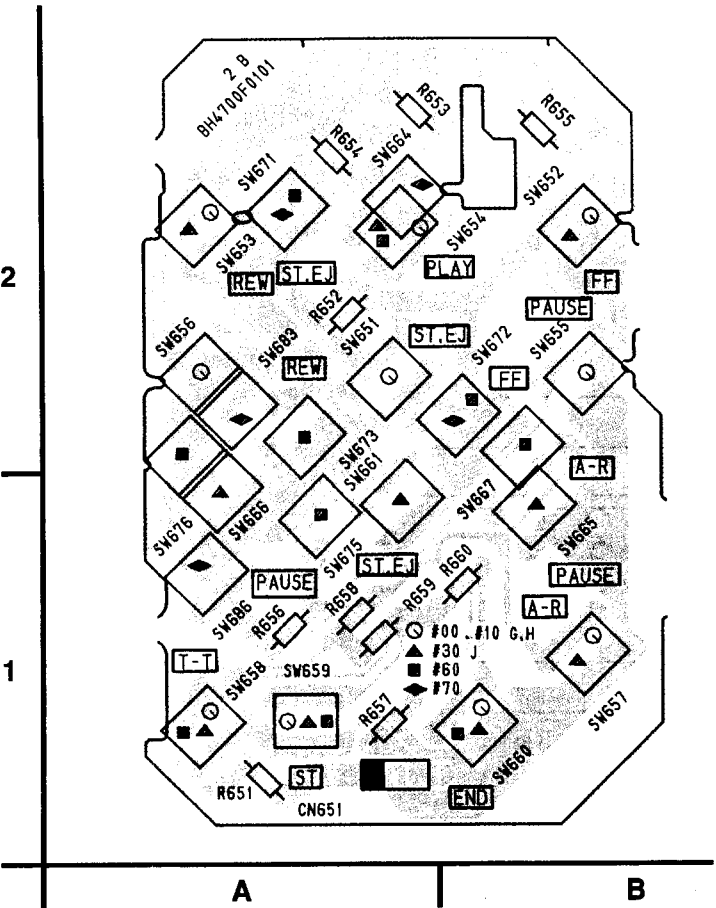


PROTECTION AGAINST FIRE HAZARD,
WITH THE SAME TYPE FUSE.

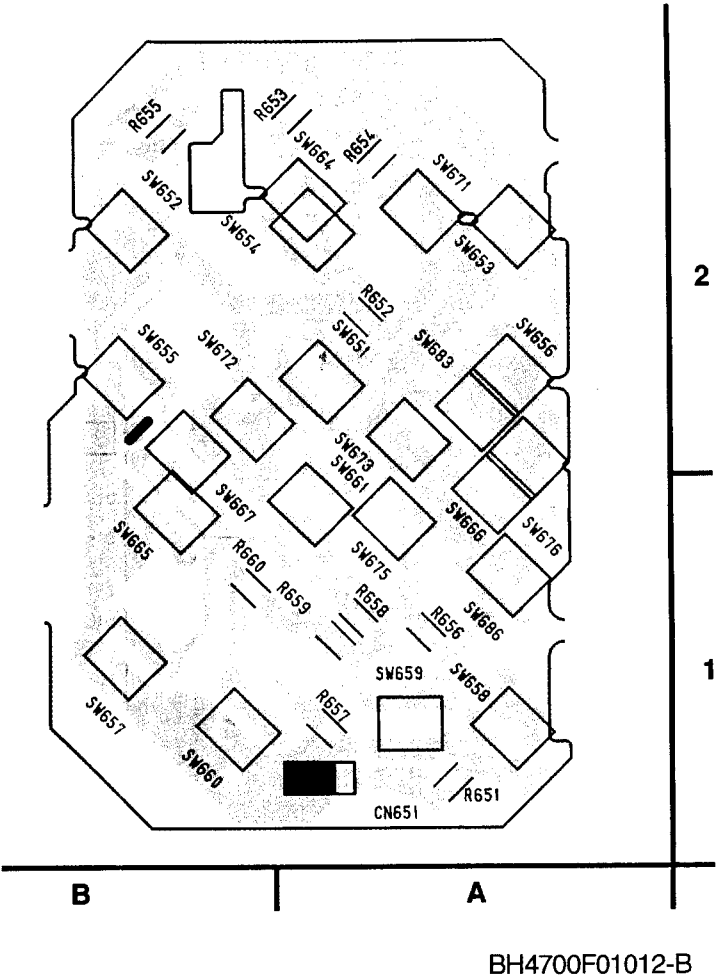
Mode SW Schematic Diagram



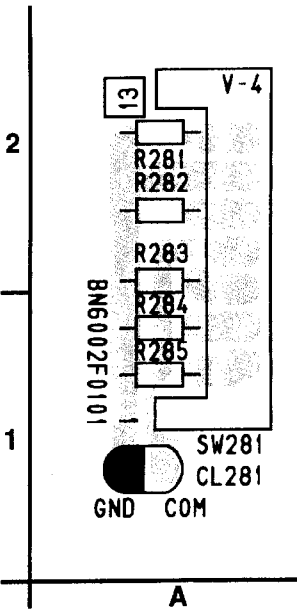
Function CBA Top View



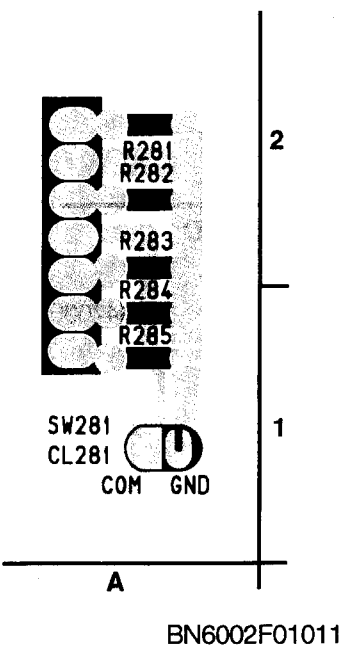
Function CBA Bottom View



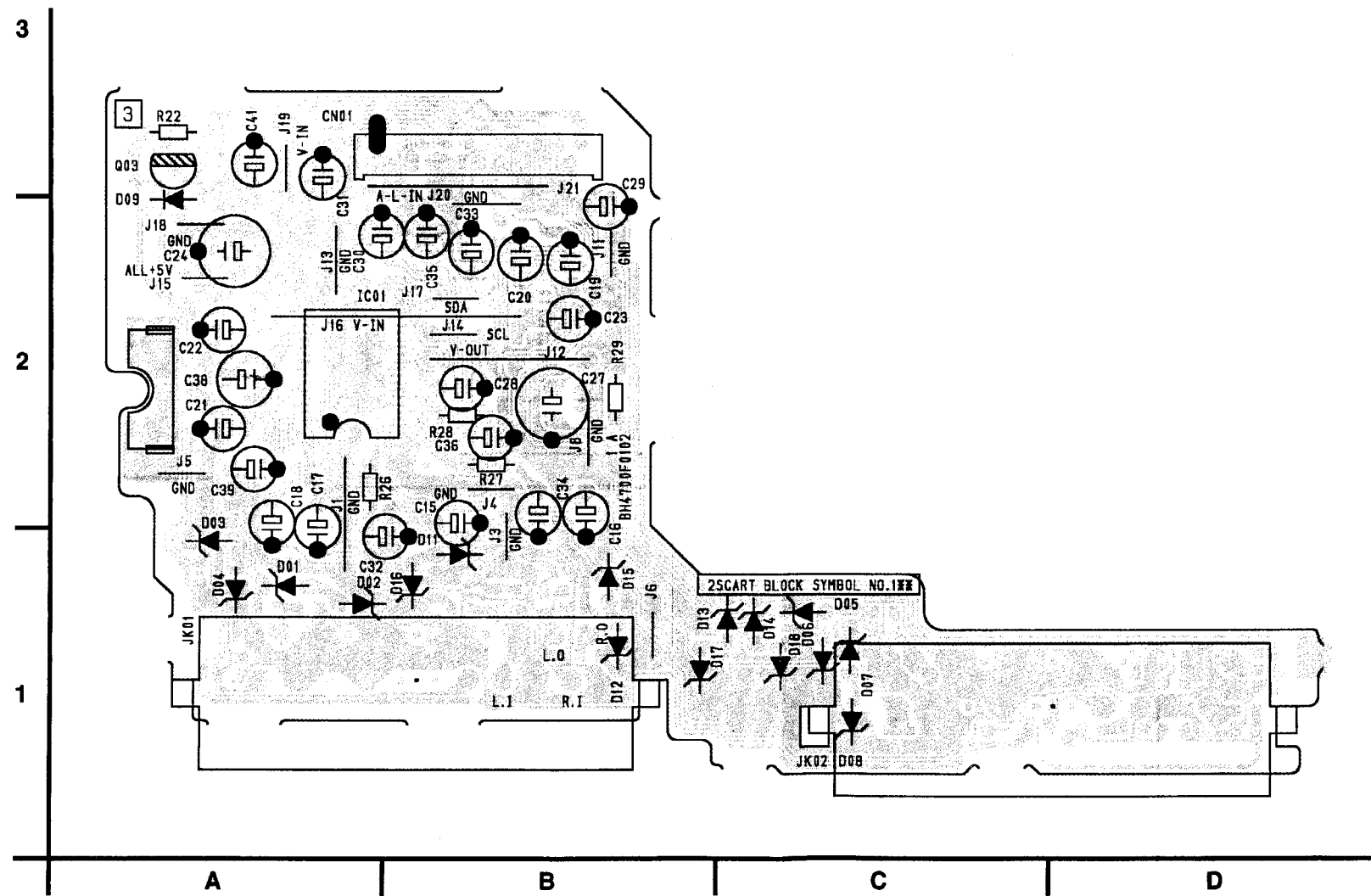
Mode SW CBA Top View



Mode SW CBA Bottom View

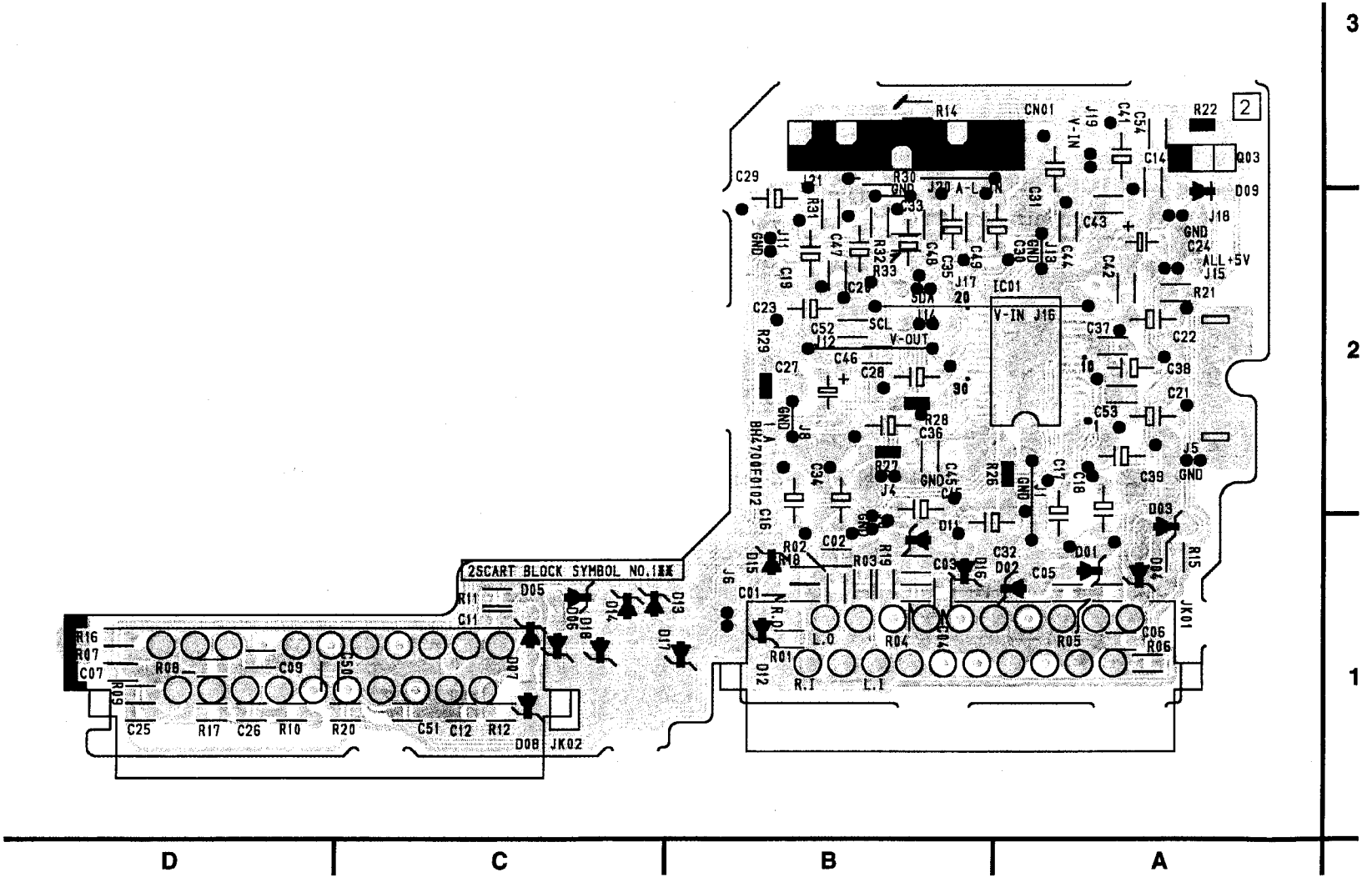


Jack CBA Top View



BH4700F01021

Jack CBA Bottom View



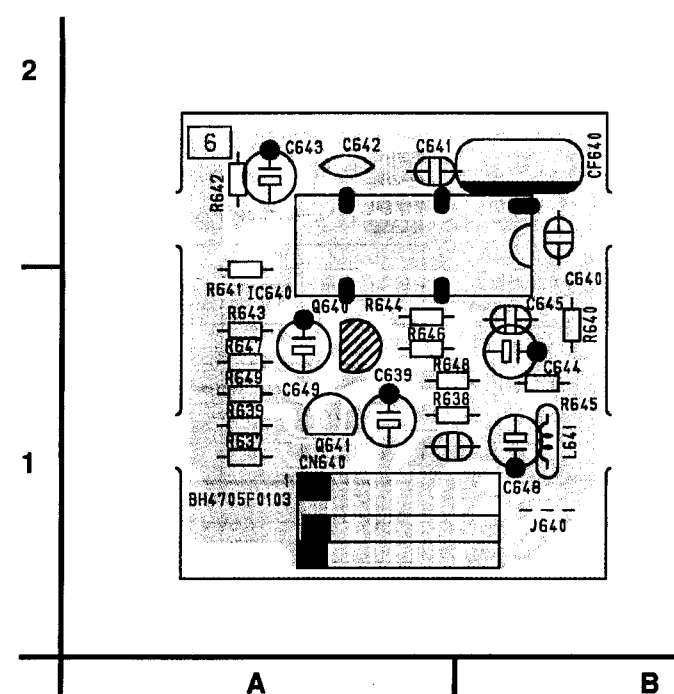
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1-8-34

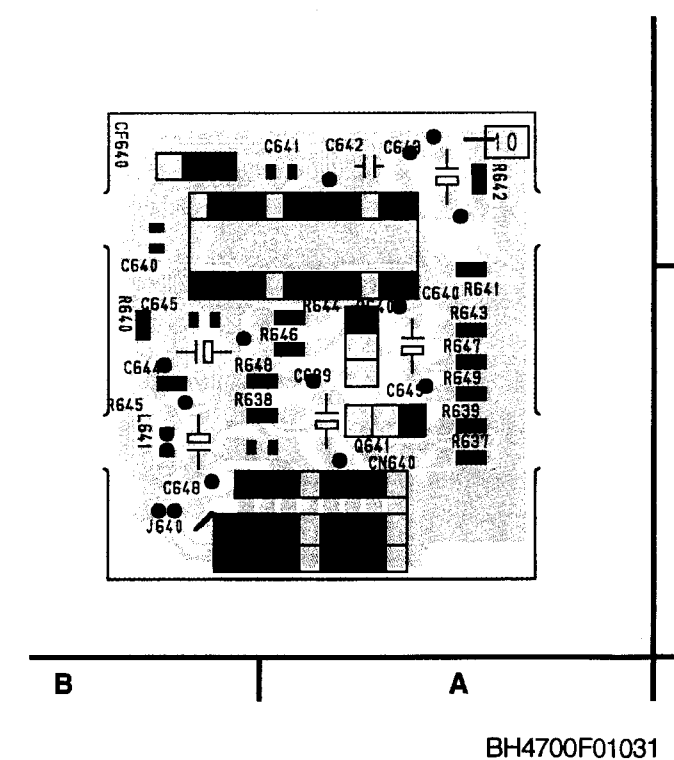
Comparison chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

VPS/PDC Top View (B, D)

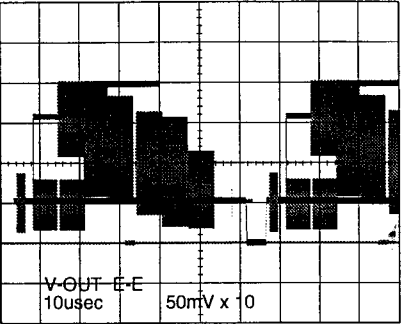


VPS/PDC Bottom View (B, D)



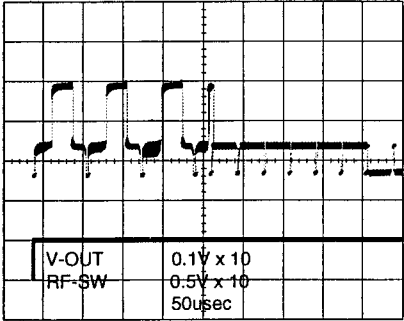
WAVEFORMS

WF1 (TP751 of Main CBA)



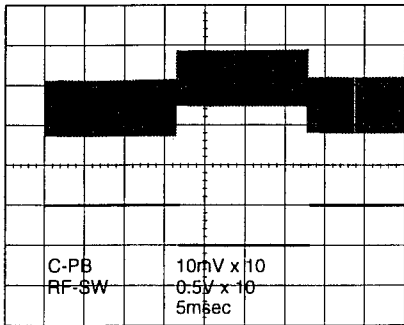
WF1 UPPER (TP751 of Main CBA)

WF2 LOWER (TP302 of Main CBA)



WF5 UPPER (TP301 of Main CBA)

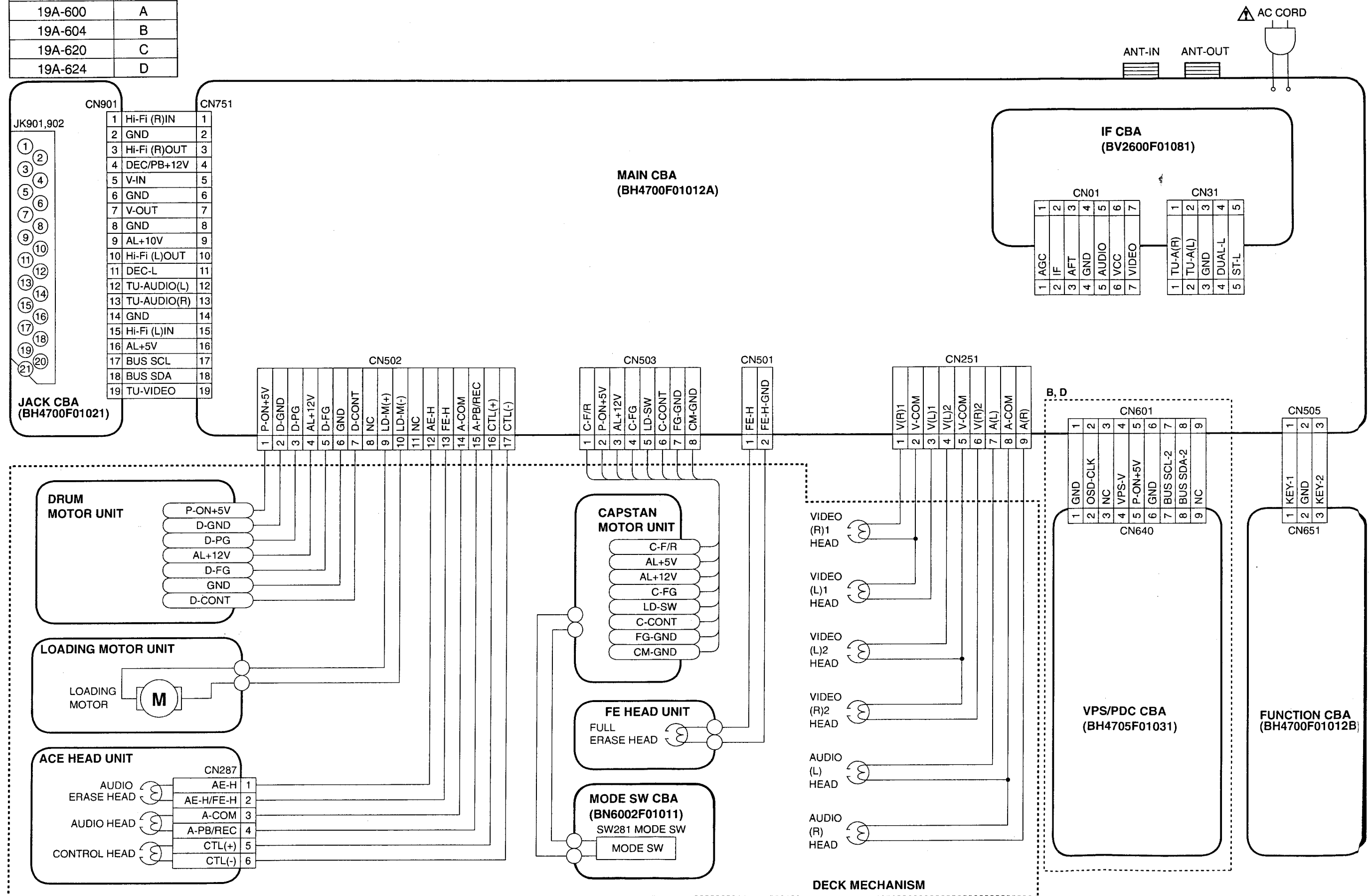
WF2 LOWER (TP302 of Main CBA)



Comparison Chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

WIRING DIAGRAM



SYSTEM CONTROL TIMING CHARTS

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	AU
3.20V~3.75V (3.40V)	AL
0.26V~0.65V (0.44V)	SS
4.51V~5.00V (5.00V)	GC
2.61V~3.19V (2.97V)	RS

Note:

EJ → RS : Loading FWD (LM-FWD "H", LM-REV "L")
RS → EJ : Loading REV (LM-FWD "L", LM-REV "H")
Stop (A) = Loading
Stop (B) = Unloading

Note :

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ Capstan Reversal
GC	Capstan Reversal ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control
Frame Advance Timing Chart
1) SP Mode

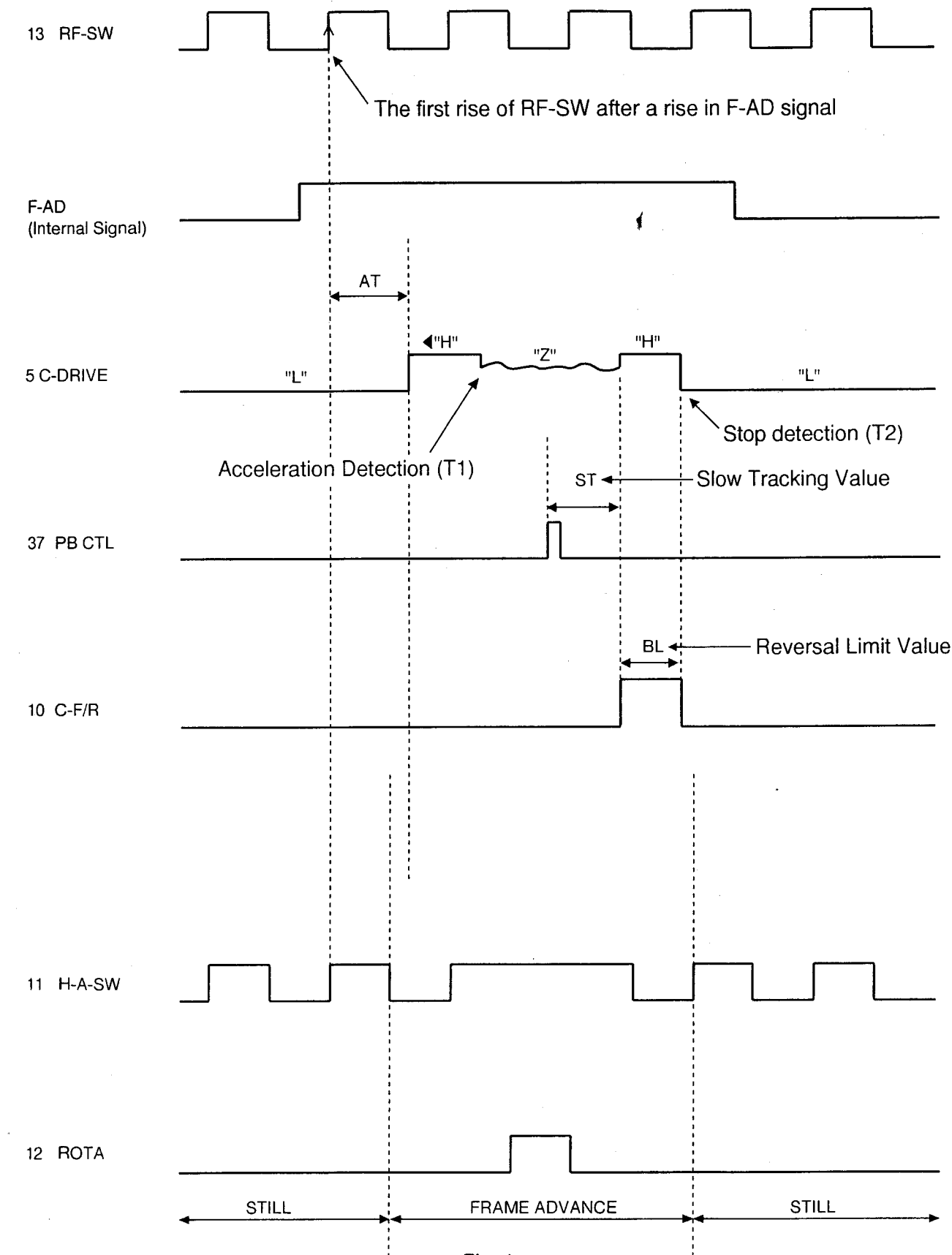


Fig. 1

2) LP/SLP Mode

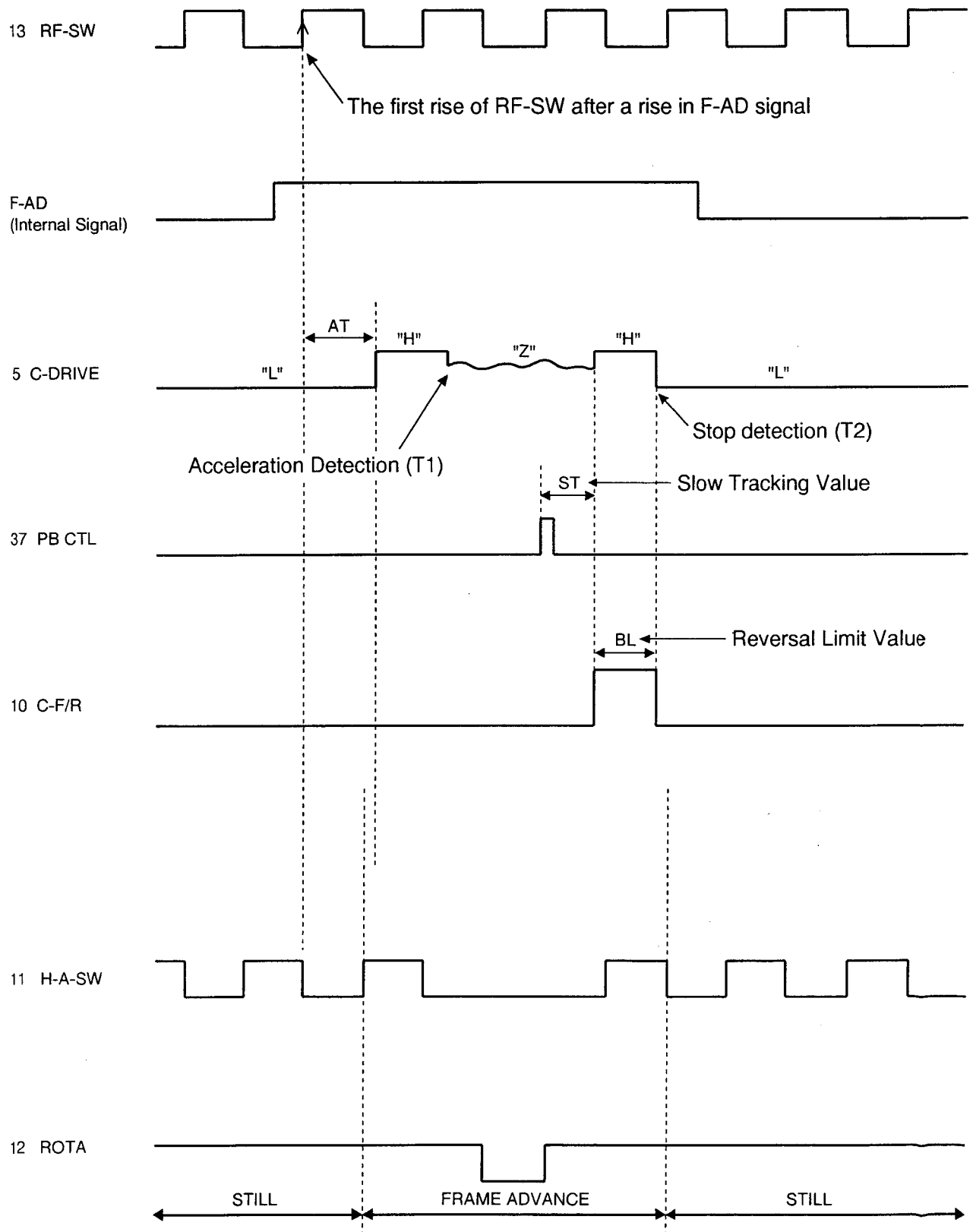


Fig. 2



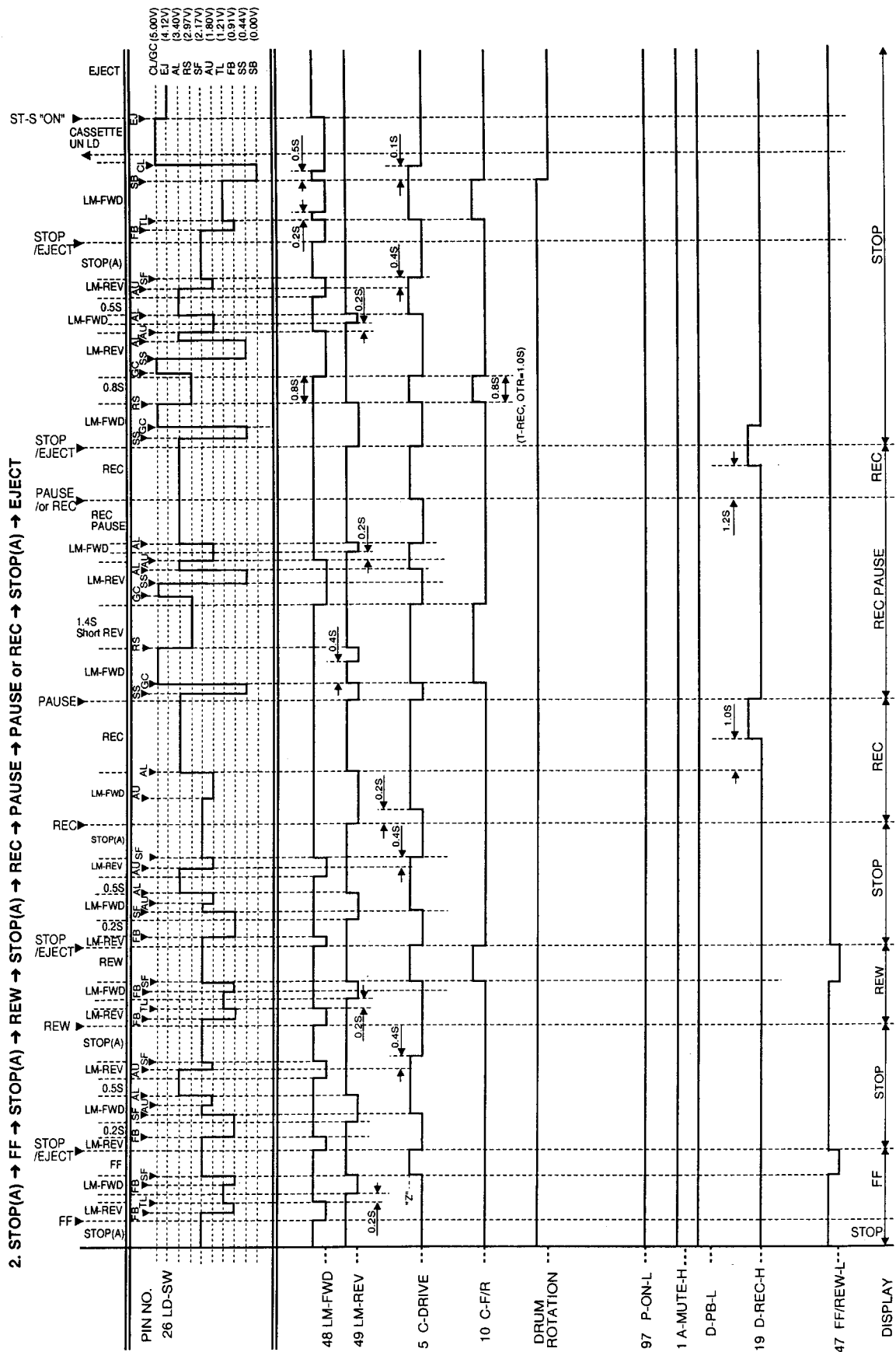


Fig. 4

IC PIN FUNCTION

Comparison Chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

IC501 (SERVO / SYSTEM CONTROL IC)

"H" ≥ 4.5V, "L" ≤ 1.0V

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
1		OUT	A-MUTE-H	Audio Mute Control Signal	H
2		OUT	REC-CTL(+)	Record Control Signal (+)	H/L
3		OUT	REC-CTL(-)	Record Control Signal (-)	H/L
4	A,B	-	N.U.	Not Used	-
	C,D	-	N.U.	Not Used (GND)	-
5		OUT	C-DRIVE	Capstan Motor Drive Signal	H/Z
6	A,B	-	N.U.	Not Used	-
	C,D	-	N.U.	Not Used (GND)	-
7	A,B	-	N.U.	Not Used	-
	C,D	-	N.U.	Not Used (GND)	-
8		IN/OUT	BUS SDA-2	I2C BUS Control Data	H/L
9		OUT	BUS SCL-2	I2C BUS Control Data	H/L
10		OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L" / REV="H")	H/L
11		OUT	H-A-SW	Video Head amp Switching Pulse	H/L
12		OUT	ROTA	Color Phase Rotary Changeover Signal	H/L

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
13		OUT	RF-SW	Video Head Switching Pulse	H/L
14		IN	ST-L	Tuner Stereo Detector Signal	L
15		OUT	HiFi-SW	HiFi Audio Head Switching Pulse	H/L
16		IN	DUAL-L	Tuner Dual Detector Signal	L
17		OUT	D-VSYNC	Dummy Vertical Synchronized Pulse	H/Hi-Z
18		IN	A-MODE	HiFi Tape Detection Signal	L
19		OUT	D-REC-H	Delayed Record Signal (Recording="H")	H
20		-	N.U.	Not Used (GND)	-
21		IN	REC-SW	Record Safety Switching Signal	L
22		IN	AFC	Automatic Frequency Control Signal	A/D
23		IN	V-ENV	Video Envelope Signal	A/D
24		IN	END-S	Tape END Position Detect Signal	A/D
25		IN	ST-S	Tape Start Position Detect Signal	A/D
26		IN	LD-SW	Deck Mode Position Detect Signal	A/D
27		IN	KEY-2	Key Scan Input Signal 2	A/D
28		-	AVREF	Standard Voltage Input Terminal of A/D Converter (+5V)	-

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
29		-	AVSS	GND Supply Terminal of A/D Converter (GND)	-
30		-	AVDD	Power Supply Terminal of A/D Converter (Back Up +5V)	-
31		IN	KEY-1	Key Scan Input Signal 2	A/D
32		IN	PG-DELAY/TEST	Video Head Switching Pulse Signal Adjusted Voltage	A/D
33		-	N.U.	Not Used (+5V)	-
34		IN	T-REEL	Take Up Reel Rotation Signal	H/L
35		IN	P-DOWN-L	Power Voltage Down Detector Signal	L
36		IN	C-SYNC	Composite Synchronized Pulse	H/L
37		IN	PB-CTL	Playback Control Signal	H/L
38		IN	D-PG	Drum Motor Pulse Generator	H/L
39		-	MP	GND	-
40		IN	RESET	System Reset Signal (Reset="L")	L
41		-	VSS	VSS (GND)	-
42		-	XTAL	Main Clock 13.300857 MHz (IN)	-
43		-	EXTAL	Main Clock 13.300857 MHz	-
44		IN	D-FG	Drum Motor Frequency Generator	H/L
45		IN	C-FG	Capstan Motor Rotation Detection Pulse	H/L

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
46		OUT	S-LED	LED for Sensor ON/OFF	H
47		OUT	FF/REW-L	CTL Amp Gain Switching Signal (FF/REW="L")	L
48		OUT	LM-FWD	Loading Motor Forward Control (Forward/Stop="H")	H/L
49		OUT	LM-REV	Loading Motor Reverse Control (Reverse/Stop="H")	H/L
50		OUT	C-CONT	Capstan Motor Control Signal	PWM
51		OUT	D-CONT	Drum Motor Control Signal	PWM
52		-	N.U.	Not Used (GND)	-
53		IN	H-A-COMP	Head Amp Comparator Signal	H/L
54		OUT	G1	Display Digit	H/L
55		OUT	G2	Display Digit	H/L
56		OUT	G3	Display Digit	H/L
57		OUT	G4	Display Digit	H/L
58		OUT	G5	Display Digit	H/L
59		OUT	G6	Display Digit	H/L
60	A,B	-	N.U.	Not Used	-
	C,D	OUT	G7	Display Digit	H/L
61	A,B	-	N.U.	Not Used	-
	C,D	OUT	G8	Display Digit	H/L
62	A,B	-	N.U.	Not Used	-
	C,D	OUT	G9	Display Digit	H/L
63	A,B	-	N.U.	Not Used	-
	C,D	OUT	G10	Display Digit	H/L
64		OUT	a	Display Segment	H/L
65		OUT	b	Display Segment	H/L
66		OUT	c	Display Segment	H/L

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
67		OUT	d	Display Segment	H/L
68		OUT	e	Display Segment	H/L
69		OUT	f	Display Segment	H/L
70		OUT	g	Display Segment	H/L
71		OUT	h	Display Segment	H/L
72		OUT	i	Display Segment	H/L
73		OUT	j	Display Segment	H
74		-	N.U.	Not Used	-
75		-	N.U.	Not Used	-
76		-	N.U.	Not Used	-
77		-	N.U.	Not Used	-
78		IN	VFDP	-28V	-
79	A,C	-	N.U.	Not Used	-
79	B,D	OUT	OSD-CS-L	On-Screen Display IC Control Chip Select Signal at Low	L
80	A,C	-	N.U.	Not Used	-
80	B,D	OUT	OSD-DATA	On-Screen Display IC Control (Data)	H/L
81	A,C	-	N.U.	Not Used	-
81	B,D	OUT	OSD-CLK	On-Screen Display IC Control (Clock)	H/L
82		IN	DAVN-L	PDC Data Receive="L"	L
83		IN	DEC-L	Control Input Signal to AV2 (Scart Jack)	L
84		OUT	T-DAC	Tuning Voltage Control	PWM
85		OUT	REMO-CON	Remote control Sensor	H/L
86		-	TEX	Sub Clock 32KHz	-
87		-	TX	Sub Clock 32KHz	-
88		-	VSS	VSS (GND)	-

Pin No.	Mark	IN/OUT	Signal Name	Function	Active Level
89		-	VDD	VDD (Back Up 5V)	-
90		-	VPP	VPP (Back Up 5V)	-
91		IN/OUT	BUS SDA	IICBUS Control Data	H/L
92		OUT	BUS SCL	IICBUS Control Clock	H/L
93		-	N.U.	Not Used (GND)	-
94		-	N.U.	Not Used	-
95		-	N.U.	Not Used	-
96		-	N.U.	Not Used	-
97		OUT	P-ON-L	Power On Signal at Low	L
98		OUT	DEC/PB-L	Control Output Signal to AV1 (Scart Jack)	L
99		OUT	V-MUTE-H	Video Mute Signal	H
100		OUT	STILL/SLOW-L	Still/Slow Circuit Change Over "L" Signal (STILL/SLOW Mode ="L," Other ="Hi-Z)	L

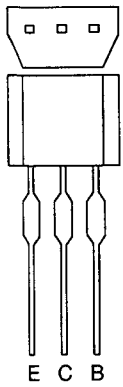
Notes:

Abbreviation for Active Level:

PWM -- Pulse Wide Modulation

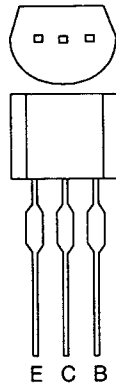
A/D -- Analog - Digital Converter

LEAD IDENTIFICATIONS

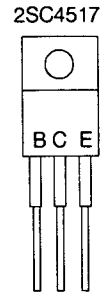


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KTC3193(Y)
KTA1267(Y.GR)
2SA1175(J.H.F)
2SA608(E.F)
KTC3199(Y, GR)
2SC2785(J.H.F.K)
2SA1346
2SA933AS(Q,R,S)
2SC1740
2SC2058(Q)
DTA124ES

KRA103M
KRC103M
2SC3576
2SA1654
2SC4133
KSR1214
KRC106M-AT
DTC124ES

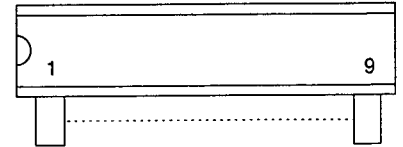


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2SC1815-GR (TPE2)
2SC1815-Y (TPE2)
2SD734F-NP-AQ
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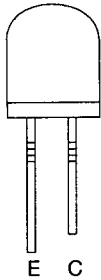


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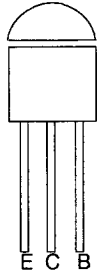
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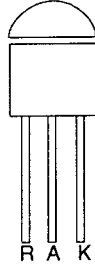
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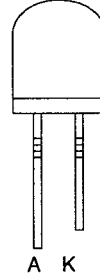
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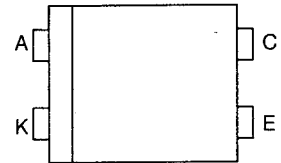
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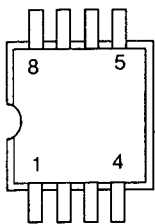
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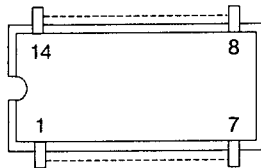
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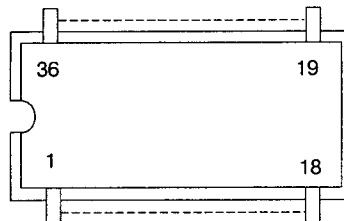
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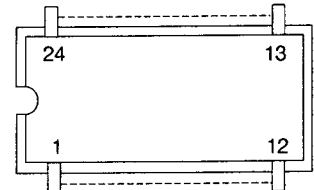
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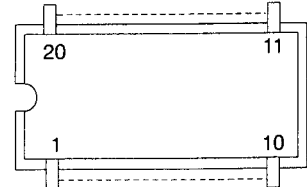
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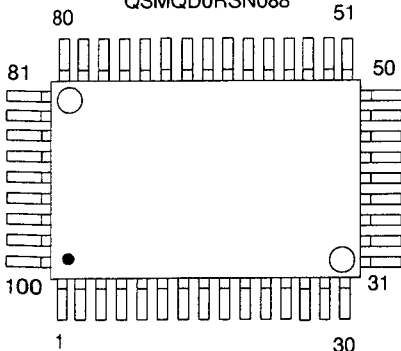
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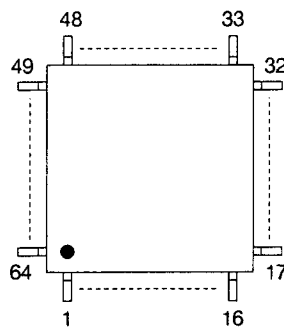
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LC74793-9173



LA71590M
QSMQB0RSN088
QSMQC0RSN088
QSMQD0RSN088



LA72638M



Note:

A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference

DECK MECHANISM SECTION

4 head Hi-Fi VIDEO CASSETTE RECORDER

**19A-600 / 19A-604 /
19A-620 / 19A-624**

Sec. 2: Deck Mechanism Section

- Standard Maintenance
- Alignment for Mechanism
- Disassembly/Assembly of Mechanism
- Front Loading Assembly
- Alignment Procedures of Mechanism

TABLE OF CONTENTS

Standard Maintenance.....	2-1-1
Service Fixtures and Tools.....	2-2-1
Mechanical Alignment Procedures	2-3-1
Disassembly / Assembly Procedures of Deck Mechanism	2-4-1
Front Loading Assembly	2-4-8
Alignment Procedures of Mechanism	2-4-10

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ○: Check ●: Change

Deck		Periodic Service Schedule			
Ref. No.	Part Name	1,000 H	2,000 H	3,000 H	4,000 H
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B21	Loading Belt		●		●
B27	Tension Lever Assembly		●		●
B31	AC Head Assembly			●	
B32, B339	Reel (T), Reel (S)			●	
B37	Capstan Motor		●		●
B52	Capstan Belt		●		●
*B73	FE Head CBA			●	
B132	Clutch Assembly		●		●
B133	Idler Assembly		●		●
B410	Pinch Roller Assembly		●		●
B413	Main Brake T Sub Assembly		●		●
B414	Main Brake S Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / Audio Control Head / Full Erase Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

* B73 — VCR Model only

Cleaning

Cleaning of Video Head

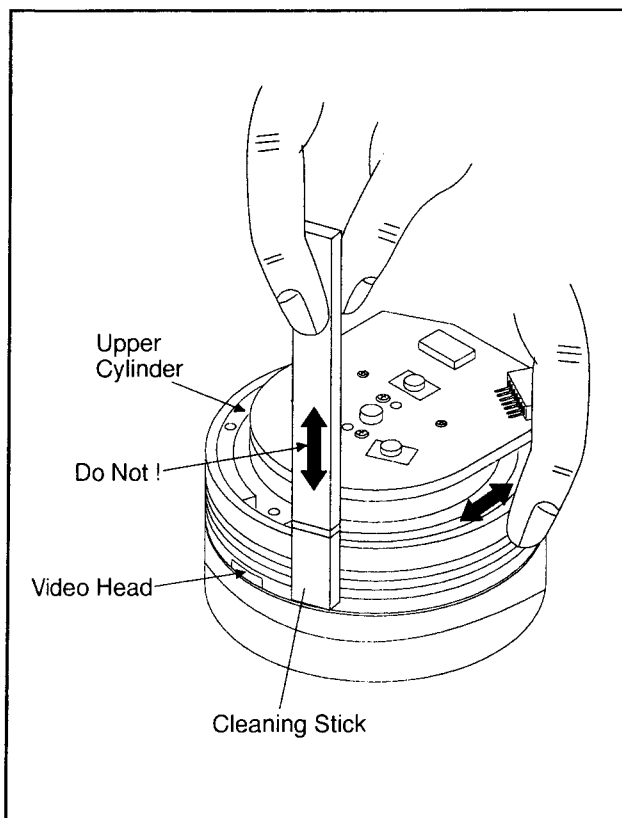
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of Audio Control Head

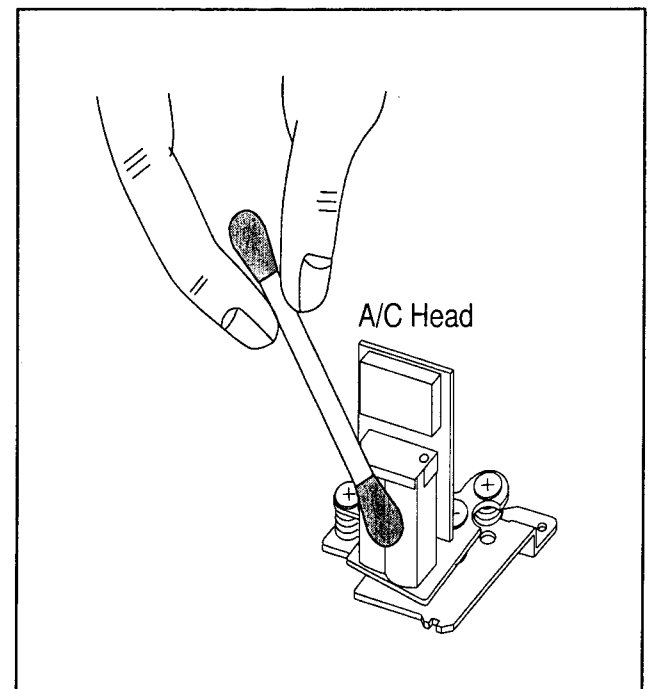
Clean the head with a cotton swab.

Procedure

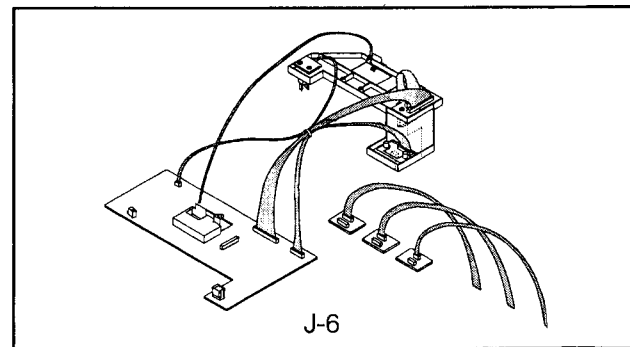
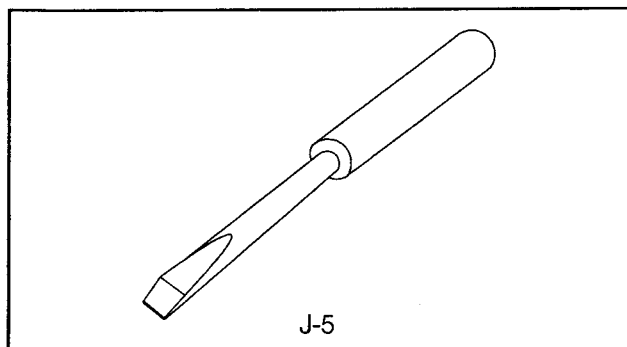
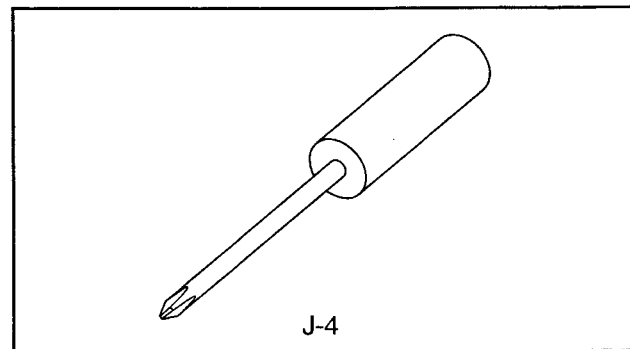
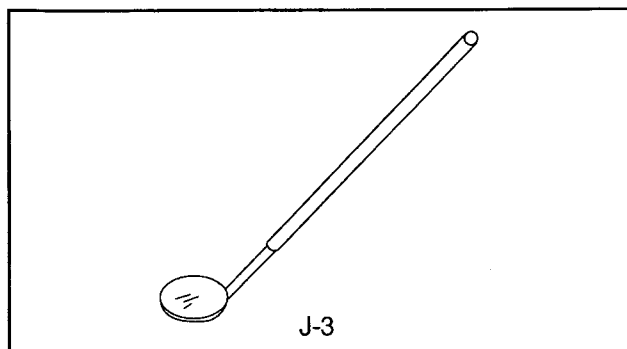
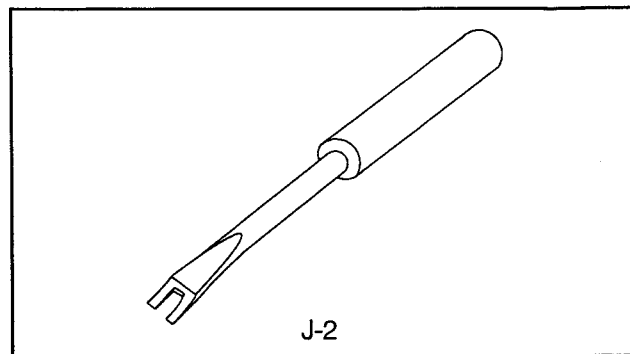
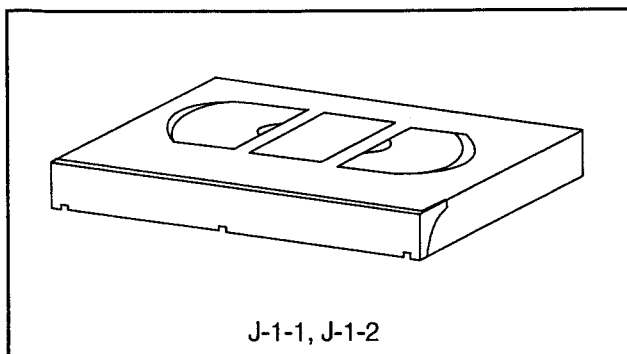
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the audio control head. Be careful not to damage the upper drum and other tape running parts.

Notes:

1. Avoid cleaning the audio control head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



SERVICE FIXTURE AND TOOLS



Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL6A	Head Adjustment of Audio Control Head
J-1-2	Alignment Tape	FL6N8 (1speed only) FL6NS8 (2speed only)	Azimuth and X Value Adjustment of Audio Control Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj.Screwdriver	FSJ-0006	Guide Roller
J-3	Mirror	FSJ-0004	Tape Transportation Check
J-4	Azimuth Adj.Screwdriver +	Available Locally	A/C Head Height
J-5	X Value Adj.Screwdriver -	Available Locally	X Value
J-6	U19 Deck Extension Cable	N1200XA	All Mechanical and Electrical Adjustments

Note:

Before starting any adjustment, take the Deck Assembly out of the cabinet and use J-6 to connect the Deck Assembly with the Main CBA.

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Cover.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the Pulley Assembly in the appropriate direction shown in Fig. M1 until the cassette tape is fully loaded. By turning the Pulley Assembly, you are turning the cam indicated in this figure. However, movement of the cam will be very slow. Allow a minute or two to complete this task.

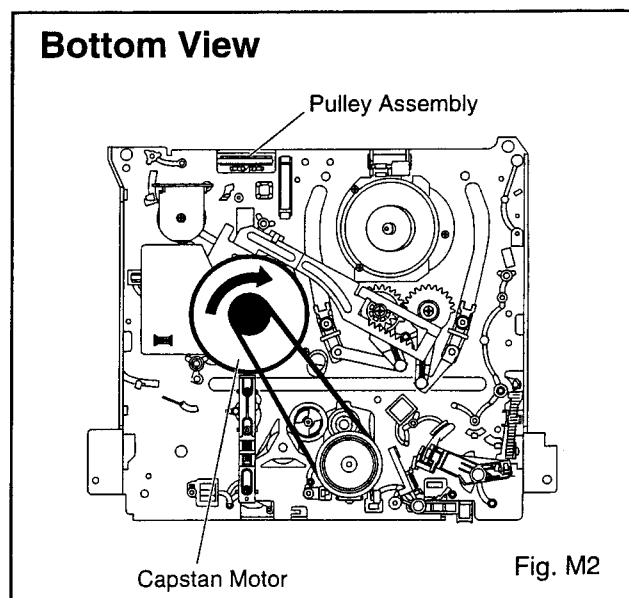
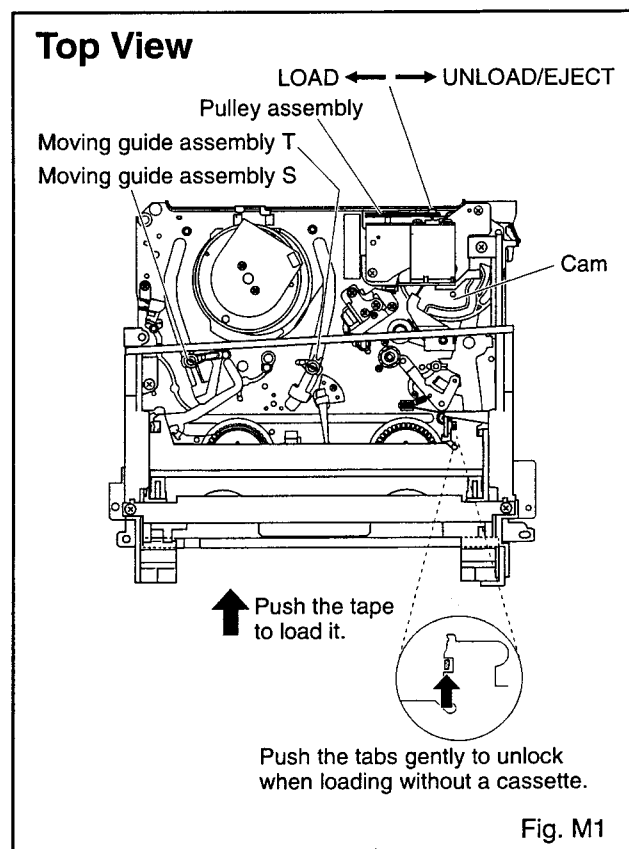
To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Cover.
3. Turn the Pulley Assembly in the appropriate direction shown in Fig. M1 to unload the cassette tape. When turning the Pulley Assembly, please be aware that this is a long process and the cassette will not start getting unloaded instantaneously. Within this long process, before the cassette actually starts getting unloaded, there is a time period during which the moving guide assemblies slide back to their original positions shown in Fig. M1. However, the tape will be left wound around the cylinder. To put the tape back into the cassette, gently turn the Capstan Motor in the direction shown in Fig. M2. Make sure that the tape is completely placed back in the cassette before the cassette starts getting unloaded. Otherwise the tape hanging out will be caught and damaged by the lid of the cassette when it closes. By turning the Pulley Assembly, you are turning the cam indicated in Fig. M1. As stated, movement of the cam will be very slow. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.

2. Remove the Top Cover.
3. Turn the Pulley Assembly in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the Pulley Assembly until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.



1. Tape Interchangeability Alignment

Notes:

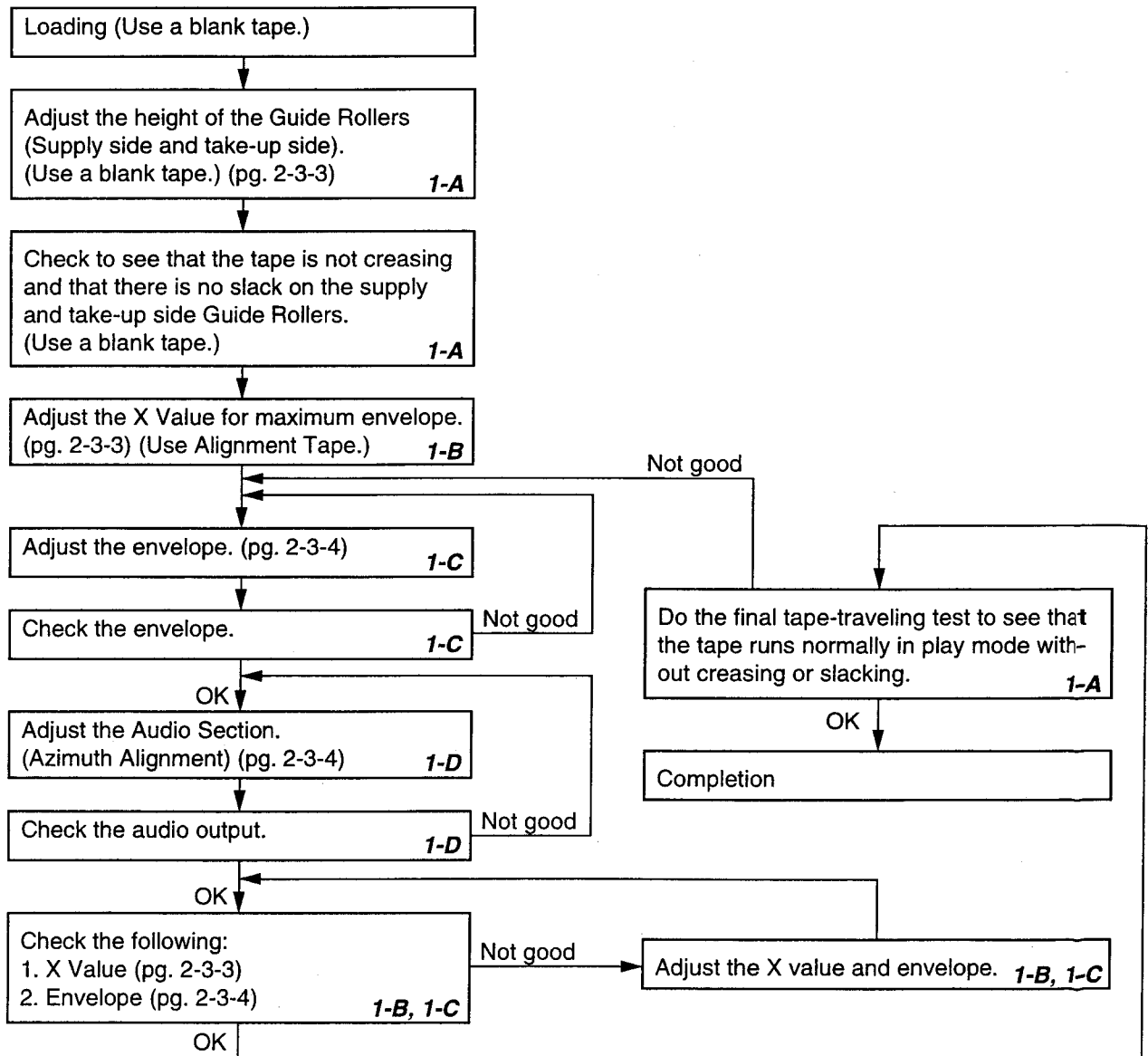
1. To do these alignment procedures, make sure that the Tracking Control Circuit is set to the center position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)
2. Remove the Guide Holder R before beginning alignment procedures.
(Refer to page 2-4-9. Fig: DM22).

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL6N8)
Guide Roller Adj. Screwdriver
X-Value Adj. Screwdriver

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling



1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

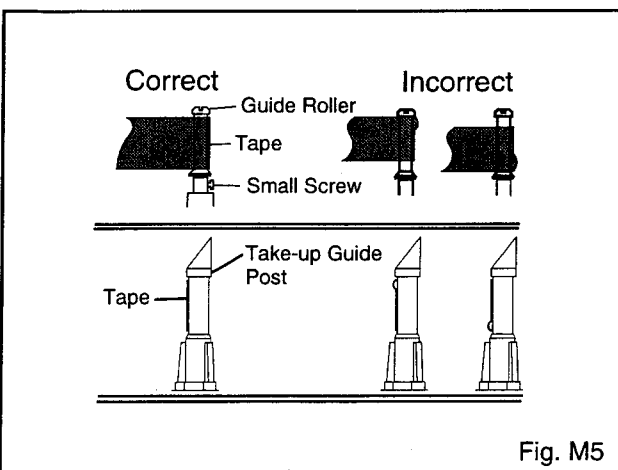
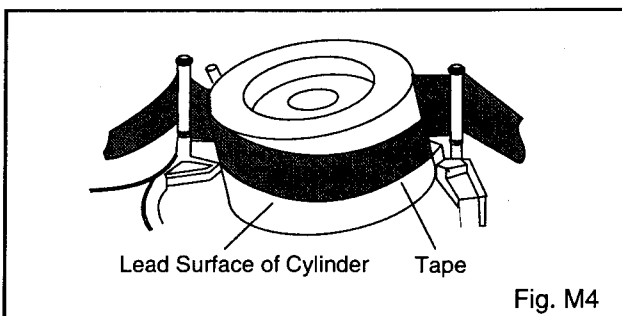
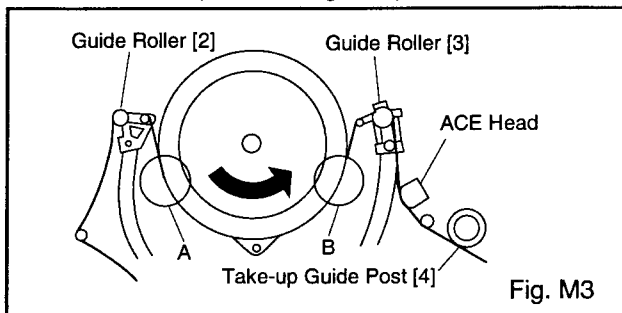
Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

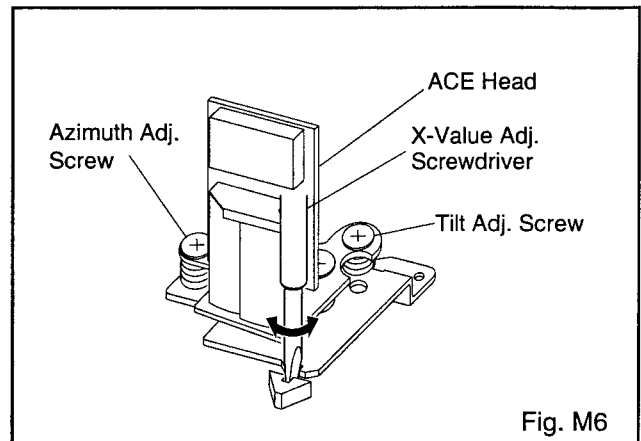
1. Play back a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

Note: Beneath each Guide Roller, there is a small screw. (Refer to Fig. M5.) This screw works



to apply adequate torque to the shaft of each Guide Roller so that the Guide Roller turns properly. Even when adjusting the height of the Guide Roller(s), do not touch these two small screws.

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)



1-B. X Value Alignment

Purpose:

To align the horizontal position of the Audio/Control/Erase Head.

Symptom of Misalignment:

If the horizontal position of the Audio/Control/Erase Head is not properly aligned, maximum envelope cannot be obtained at the Neutral position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP303 (CTL) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Play back the Gray Scale of the Alignment Tape (VFMS0001H6) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the center position by pressing the CH UP button then the PLAY button on the VCR. (Refer to note on bottom of page 2-3-4.)
4. Use the X-Value Adj. Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)
5. Press the CH UP button on VCR until the CTL waveform has shifted by approx. +2msec. Make sure that the envelope is simply attenuated (shrinks in height) during this process so that you will know the envelope has been at its peak.

6. Press the CH DOWN button on the VCR until the CTL waveform has shifted from its original position (not the position achieved in step 5, but the position of CTL waveform in step 4) by approximately -2msec. Make sure that the envelope is simply attenuated (shrinks in height) once CTL waveform passes its original position and is further brought in the minus direction.
7. Set the Tracking Control Circuit to the center position by pressing the CH UP button and then the PLAY button on the VCR.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture and precise tracking.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP302 (RF-SW) as a trigger.
2. Play back the Gray Scale on the Alignment Tape (FL6N8). Set the Tracking Control Circuit to the center position by pressing the CH UP and then the PLAY button on the VCR. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure center position. The number of pushes UP to achieve 1/2 level of envelope should match the number of pushes DOWN from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the alignment tape (FL6N8) and confirm that the audio signal output level is 6 kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Dropping envelope level at the beginning of track.

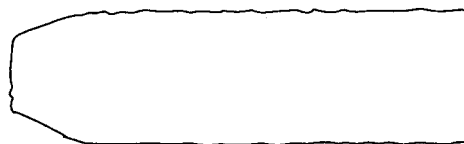


Fig. M7

Dropping envelope level at the end of track.



Fig. M8

Envelope is adjusted properly. (No envelope drop)

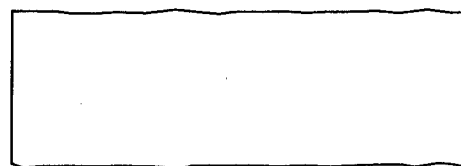


Fig. M9

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Main Mechanism

Before following the procedures described below, be sure to:

1. Remove the deck assembly from the cabinet.
(Refer to CABINET DISASSEMBLY INSTRUCTIONS on page 1-5-1.)
2. Remove Front Loading Assembly from the main mechanism of the deck assembly. (See Fig. DM1.)
3. First remove Step/Loc. No. [39], and start to remove other parts. (See Fig. DM1.)
4. Before Step/Loc. No. [2] and [9] first remove ACH Connector A, ACH Connector B, VH Connector A, and VH Connector B. (See Fig. DM2.)

All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [37] and [38] in Fig. DM3 on page 2-4-4. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START- ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Cylinder Shield	T	DM1	(S-2), (S-14)	
[2]	[2]	Loading Motor Assembly	T	DM2 DM3 DM5 DM6	(S-3), Loading Belt ACH Connectors A and B, FFC Cable	
[3]	[2]	Motor Holder	T	DM1 DM3 DM5	2(S-4)	
[4]	[2]	Cassette Drive Lever Sub Assembly	T	DM3 DM5		(+) Refer to Alignment Sec. Pg. 2-4-10
[5]	[2]	Pinch Roller Assembly	T	DM3 DM5	(C-1)	Refer to Alignment Sec. Pg. 2-4-10
[6]	[6]	Mode SW CBA	B	DM4 DM5	(S-5), Desolder	
[7]	[2]	Cam	T	DM3 DM5		(+) Refer to Alignment Sec. Pg. 2-4-10
[8]	[2]	Pulley Assembly	T	DM3 DM6	(W-1), Loading Belt	(+)
[9]	[9]	Cylinder Assembly	T B	DM2 DM3 DM7	3(S-6), *VH Connectors A and B, FFC Cable	
[10]	[10]	FE Head	T	DM3 DM7	(S-7)	
[11]	[11]	ACE Head Assembly	T	DM2 DM3 DM8	(S-8), (S-16), FFC Cable	
[12]	[12]	Tape Guide Arm Assembly	T	DM3 DM8	*(P-0), *(L-1)	
[13]	[12]	Capstan Motor	B T	DM4 DM5 DM9 DM16	4(S-9), Capstan Belt, Radiator Plate, Desolder	
[14]	[14]	M Brake S Assembly	T	DM3 DM10	*(L-4)	
[15]	[15]	Tension Lever Assembly	T	DM3 DM10	*(L-2), *(L-3), *(P-1), *(P-2)	
[16]	[16]	Rec Arm	B	DM4 DM11	*(L-5)	
[17]	[17]	BT Arm	B	DM4 DM10 DM11	*(L-6), *(P-2)	
[18]	[17]	Holder Kick Arm	B	DM4 DM11	*(P-3)	
[19]	[17]	Tension Plate	B	DM4 DM11		
[20]	[17]	Mode Lever	T	DM3 DM12	*4(L-7), *(L-8), *Locking Tab	

STEP /LOC. No.	START- ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[21]	[17]	Idler Assembly	T	DM3 DM13	(C-4)	
[22]	[15]	S Brake Lever	T	DM3 DM14	*(P-4), *(L-10)	
[23]	[17]	M Brake T sub Assembly	T	DM3 DM13	*(P-5), *(L-11)	
[24]	[15]	Reel S	T	DM3 DM14	Poly Slider Washer	(+) Base has slots.
[25]	[17]	Reel T	T	DM3 DM14	Poly Slider Washer	(+)
[26]	[26]	M Gear	T	DM3 DM14	(C-5)	
[27]	[2]	Main Lever Assembly	T	DM3 DM15		
[28]	[2]	M Lever Holder	T	DM3 DM15	*2(L-12)	
[29]	[29]	Clutch Assembly	B	DM4 DM16	(C-2), Capstan Belt, Poly Slider Washer	(+)
[30]	[29]	FF Arm	B	DM4 DM16	*2(L-13)	
[31]	[31]	Sensor Gear	B	DM4 DM17	(C-3)	
[32]	[32]	Main Lever Spring	T	DM3 DM8		
[33]	[33]	Prism	T	DM3 DM13	(S-10)	
[34]	[12]	Loading Lever Assembly	B	DM4 DM18	(S-11)	(+) Refer to Alignment Sec. Pg. 2-4-10
[35]	[34]	Loading Arm T Assembly	B	DM4 DM18		(+) Refer to Alignment Sec. Pg. 2-4-10
[36]	[34]	Loading Arm S Assembly	B	DM4 DM18	(S-15)	(+) Refer to Alignment Sec. Pg. 2-4-10
[37]	[2]	Moving Guide S Preparation	T	DM3 DM19		
[38]	[2]	Moving Guide T Preparation	T	DM3 DM19		
[39]	[39]	Deck Earth Plate	T	DM1 DM3	(S-12)	
[40]	[40]	Cleaner Assembly	T	DM3 DM7	*(L-14)	
[41]	[41]	Insulation Cover	T	DM3 DM13	*3(L-15)	
[42]	[42]	F Brake Assembly	B	DM4 DM9	2(S-13), *(P-6)	
[43]	[43]	Prism (L2)	T	DM3 DM8	(S-17)	

①

②

③

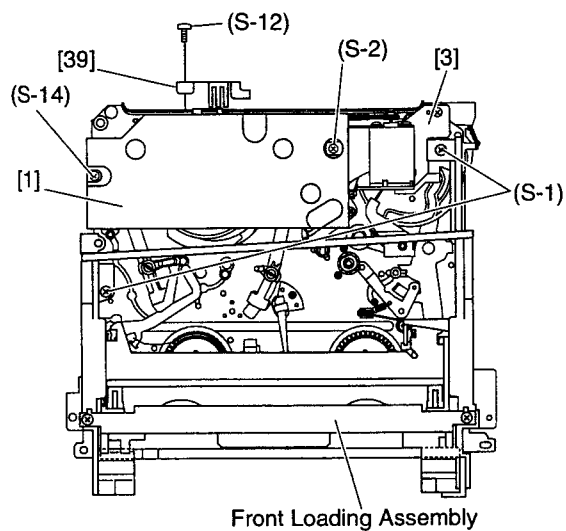
④

⑤

⑥

⑦

- ①: Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as Identification (location) No. of parts in the figures.
- ②: Indicates the part to start disassembling with in order to disassemble the part in column (1).
- ③: Name of the part
- ④: Location of the part: T=Top B=Bottom R=Right L=Left
- ⑤: Figure Number
- ⑥: Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).
- ⑦: Adjustment Information for Installation
(+): Refer to Deck Exploded Views for lubrication.



Note: Remove the Front Loading Assembly before removing [3] Motor Holder.

To remove Front Loading Assembly:

1. Remove 2 Screws; 2(S-1).
2. Lift Assembly up carefully.

Fig. DM1

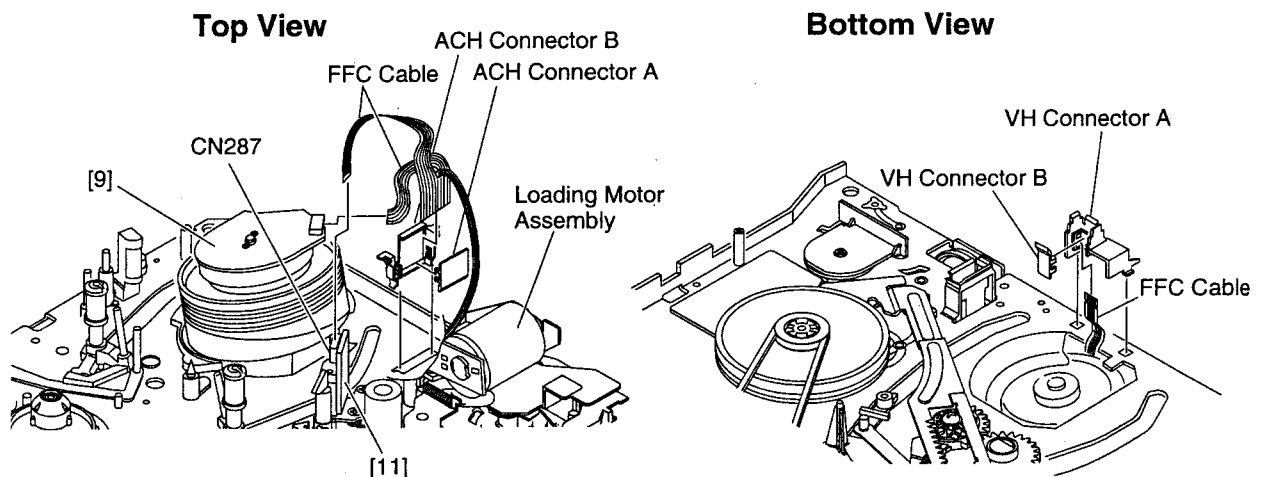


Fig. DM2

Top View

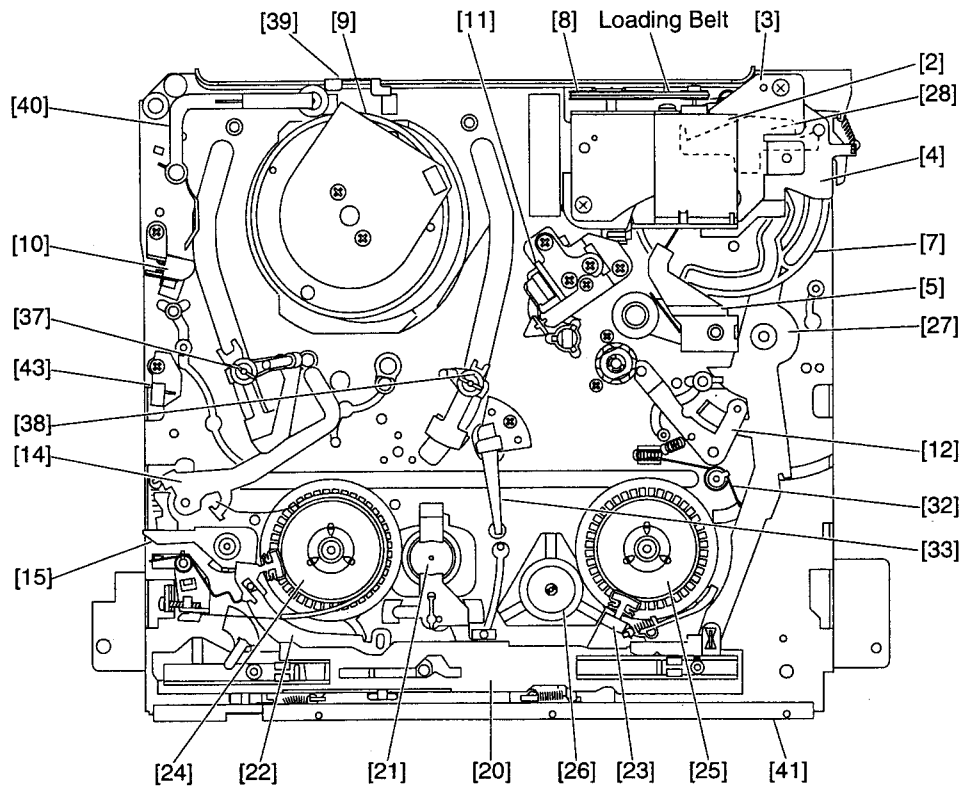


Fig. DM3

Bottom View

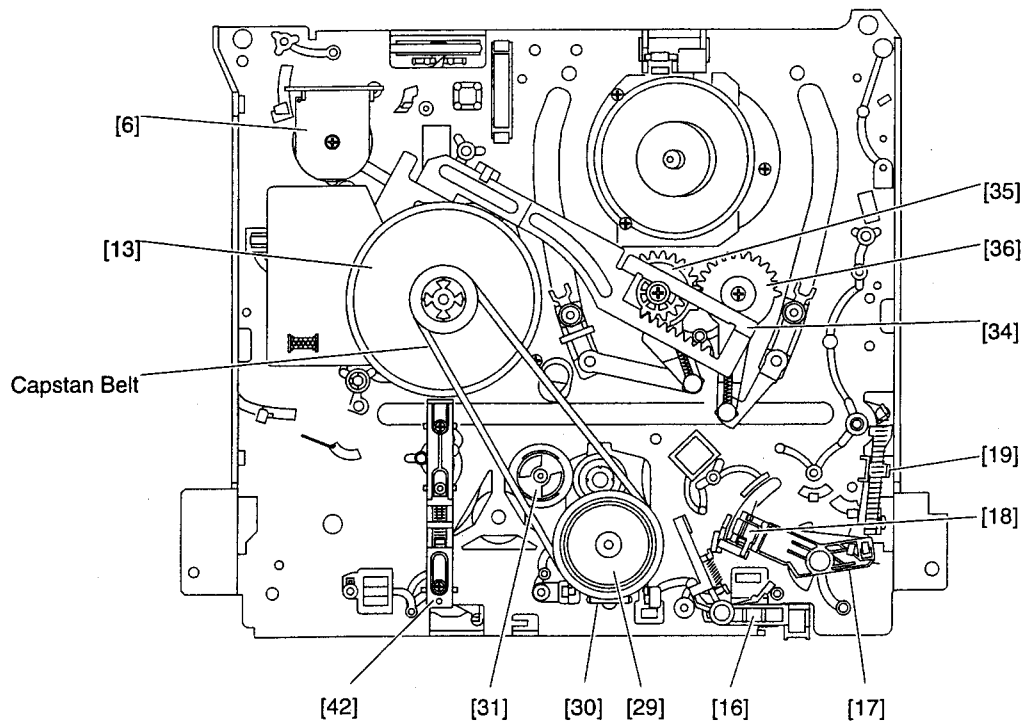
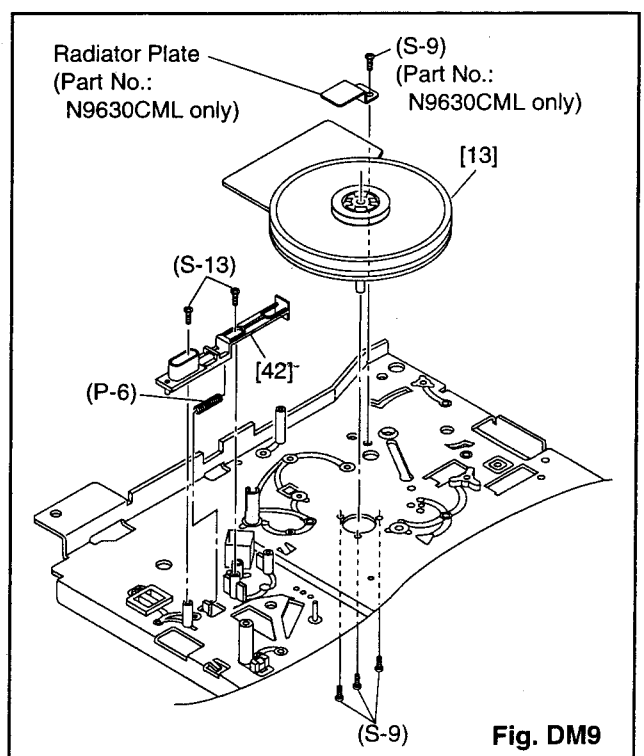
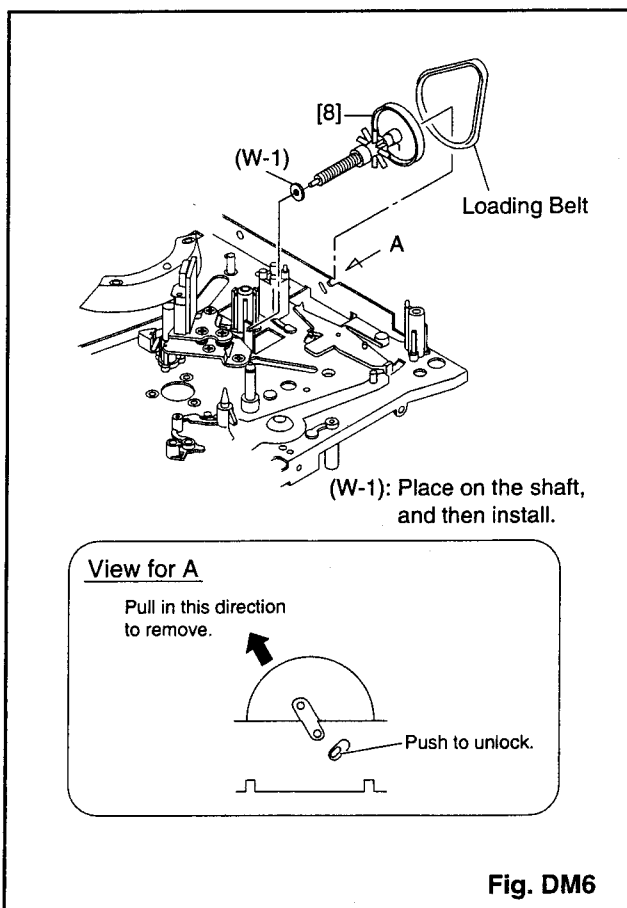
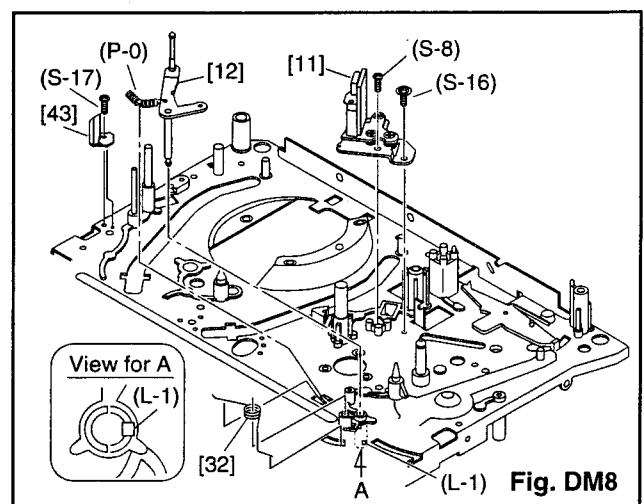
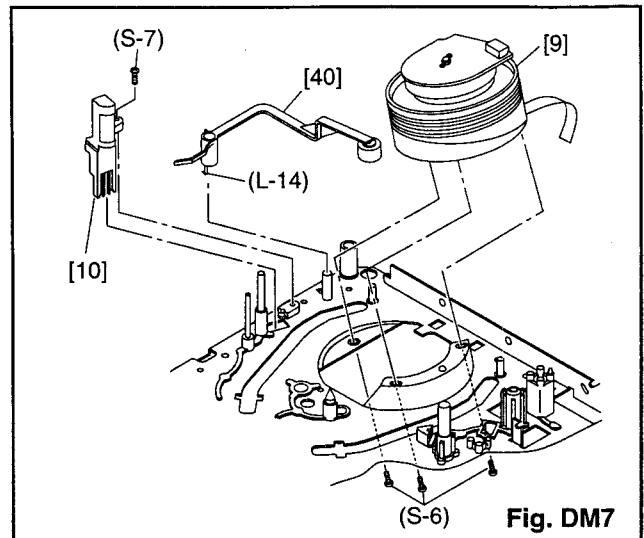
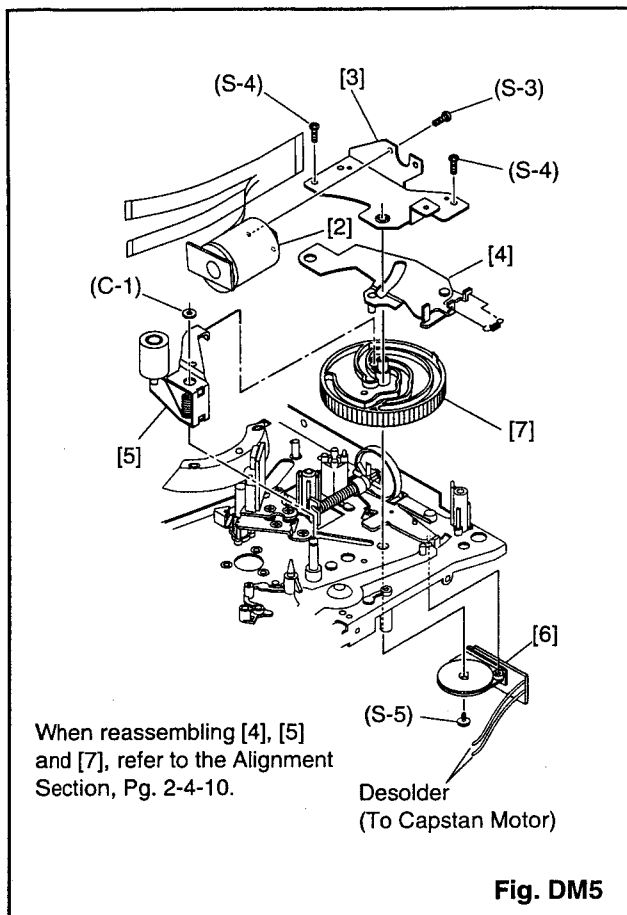
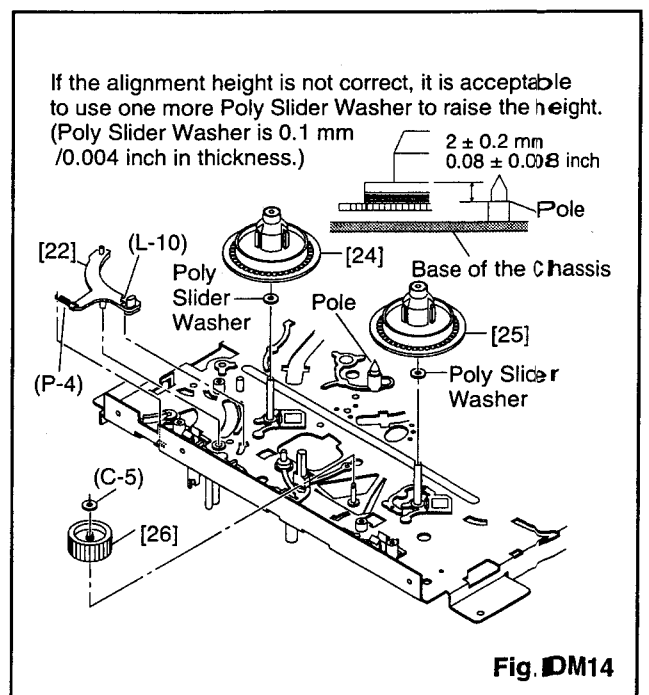
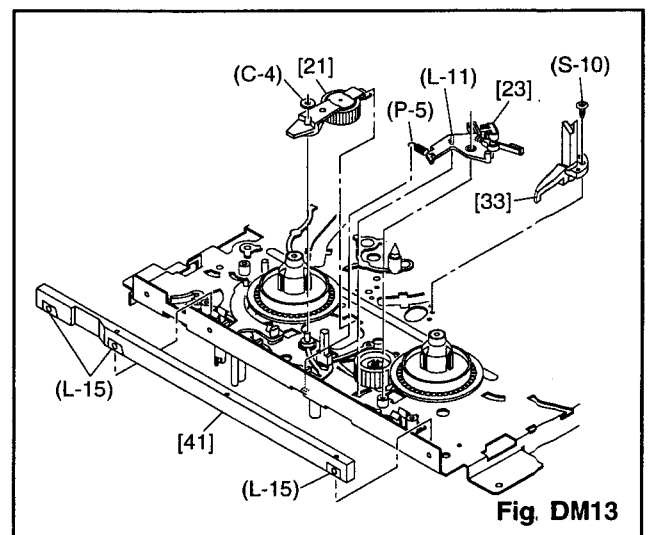
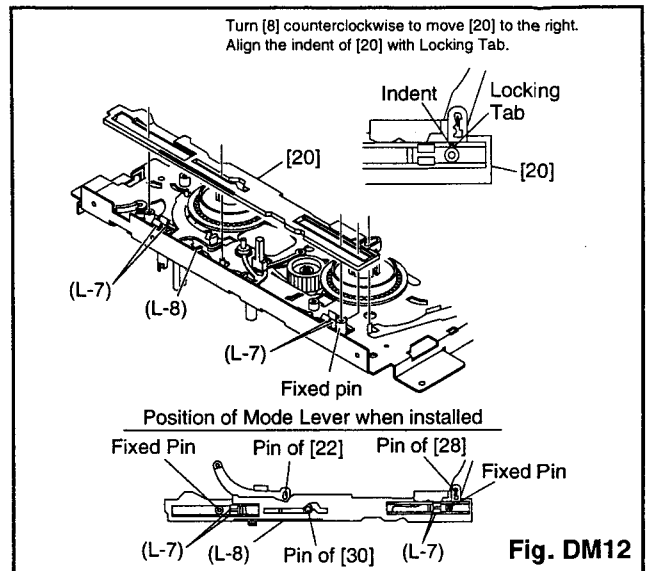
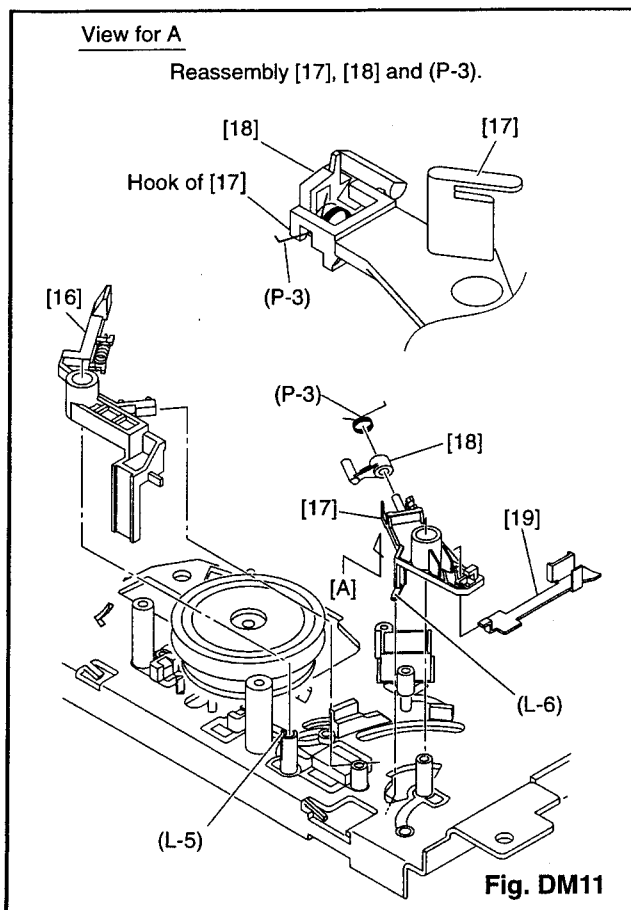
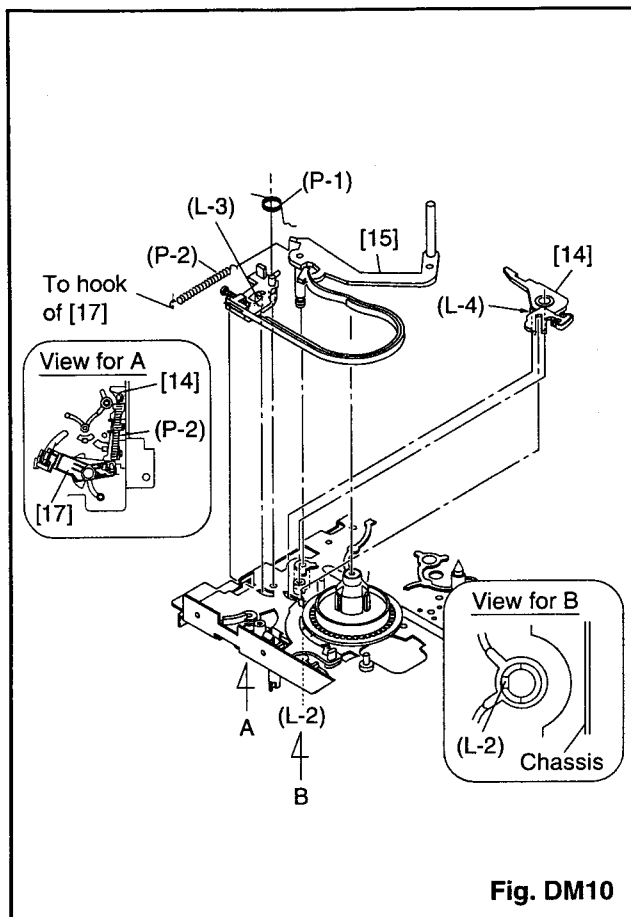
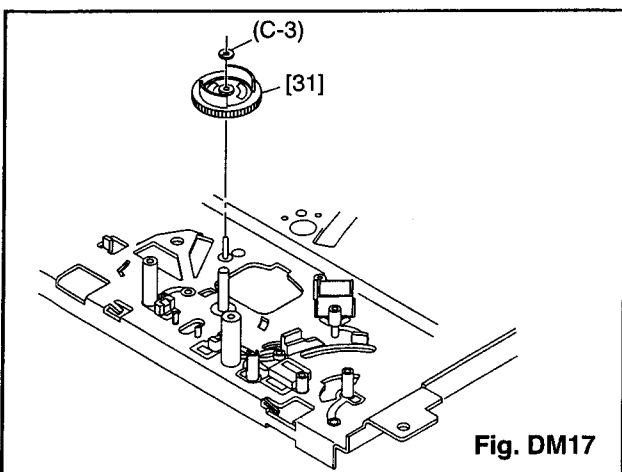
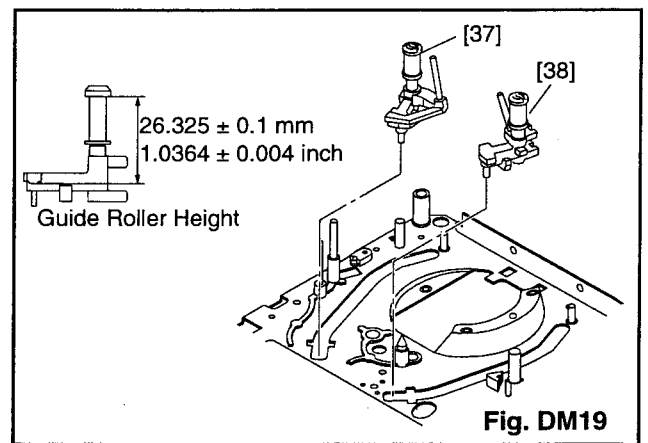
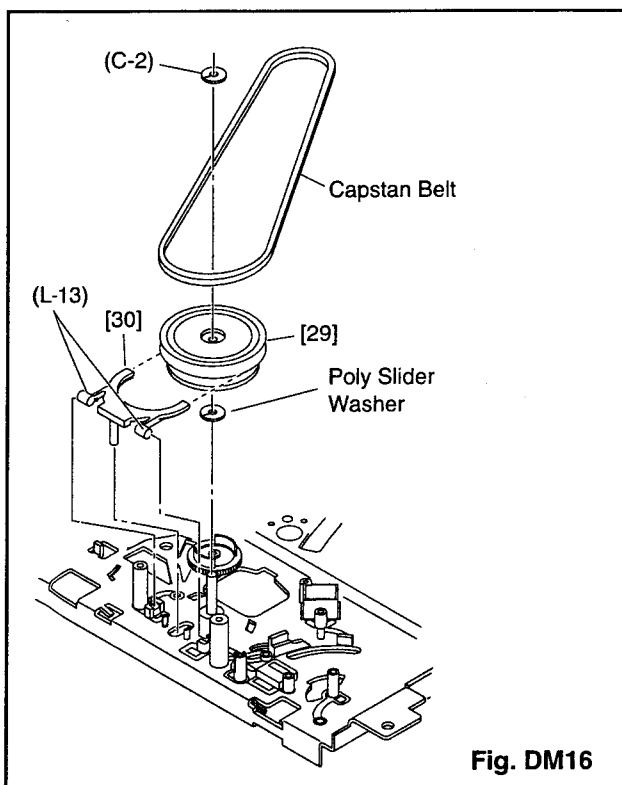
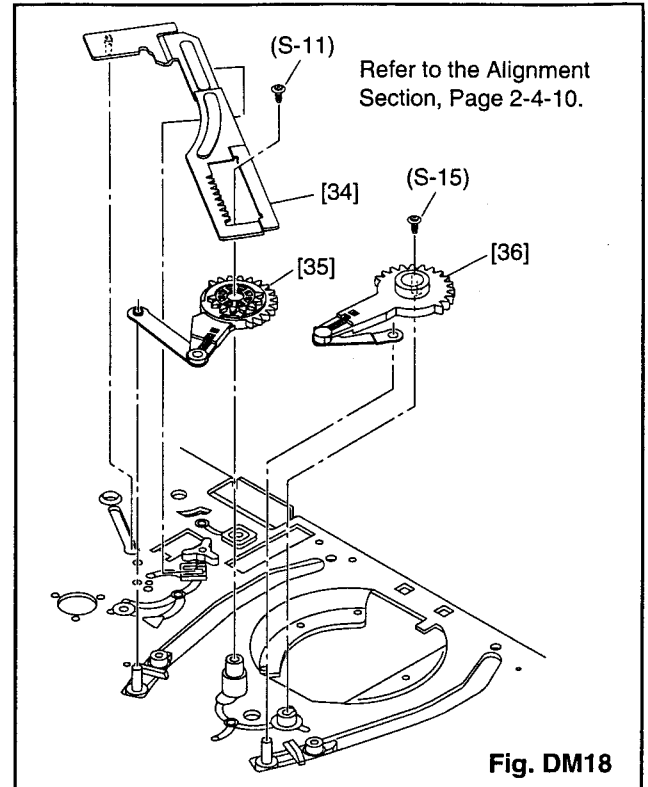
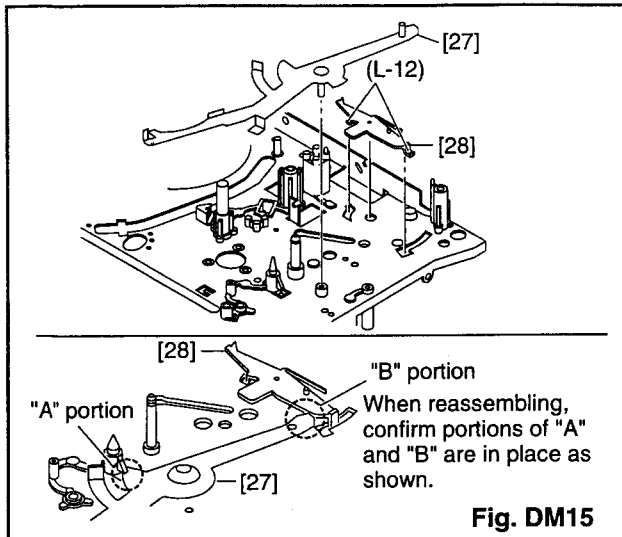


Fig. DM4







Front Loading Assembly

Before following the procedures described below, be sure to remove Front Loading Assembly from the main mechanism of the deck assembly. (See Fig. DM1.) When reassembling, start with the unit in Cassette-in mode and follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder (F)	T	DM22	2(S-1)	
[2]	[1]	Guide Holder (R)	T	DM22	(L-1)	
*[3]	[3]	Slider Gear	R	DM22 DM23	2(L-2)	Eject Position
*[4]	[3]	Slider Gear	L	DM22 DM23	2(L-3)	Eject Position
		Slider Shaft	T	DM22 DM23		Eject Position
[5]	[1]	Cassette Plate sub Assembly	T	DM20 DM21 DM22	(S-2)	
[6]	[1]	Cassette Guide R	R	DM20 DM21 DM22		
[7]	[1]	Cassette Guide L	L	DM22		
[8]	[8]	Front Door Opener	R	DM22 DM23	(L-4)	Eject Position
[9]	[9]	Rack	R	DM20 DM21 DM22	(L-5)	Cassette in Position
[10]	[9]	Cassette Drive Gear (N)	R	DM20 DM21 DM22	(L-6),Cassette Drive Gear Spring	Cassette in Position
①	②	③	④	⑤	⑥	⑦

- ①: Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as Identification (location) No. of parts in the figures.
- ②: Indicates the part to start disassembling with in order to disassemble the part in column (1).
- ③: Name of the part
- ④: Location of the part: T=Top B=Bottom R=Right L=Left
- ⑤: Figure Number
- ⑥: Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).
- ⑦: Adjustment Information for Installation
(+): Refer to Deck Exploded Views for lubrication.

*[3], *[4]: Slider Gear in Step [3] and that in Step [4] are identical. However, they are divided into two steps because, before reassembling Slider Shaft, one Slider Gear must be preinstalled at either end of Slider Shaft.

Before removing Parts [6], [9], or [10], shift [5] to
Cassette-in position.

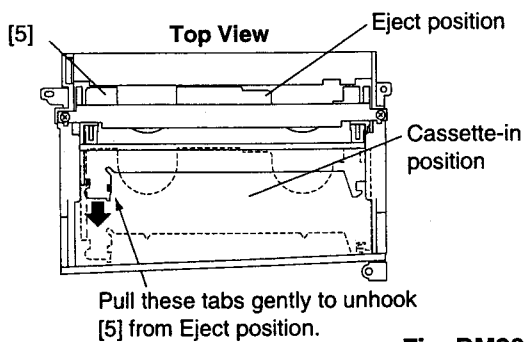


Fig. DM20

Install/remove in Cassette-
in position to ensure that
[5] is in locked position.

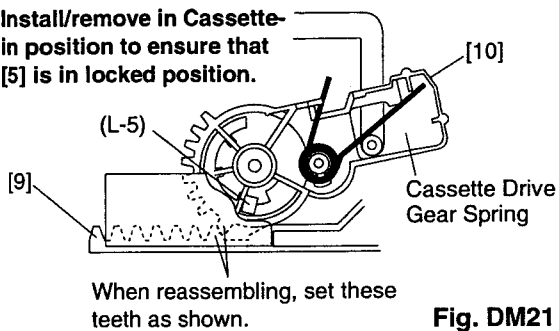
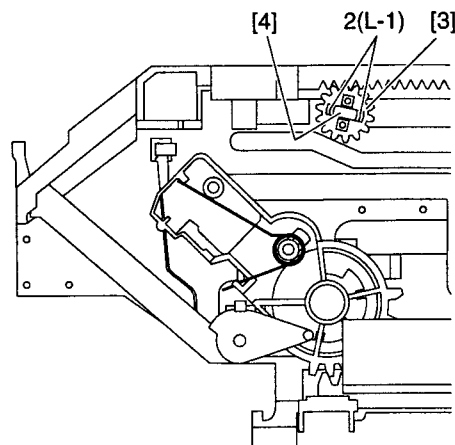


Fig. DM21

View before disassembling [3] and [4]
(Installation of Slider Shaft and Slider Gear)



Install [3] and [4] in Eject position.
(When disassembling, [3] and [4] can be removed
either in Eject position or Cassette-in position.)

- This figure shows where [3], [4] and other
parts are in Eject position.

Fig. DM23

View for A
A' Locking Tab

Guide Holder R
1. Unhook the Locking Tab.
2. Lift up the Guide Holder R
in the direction of A',
and remove.

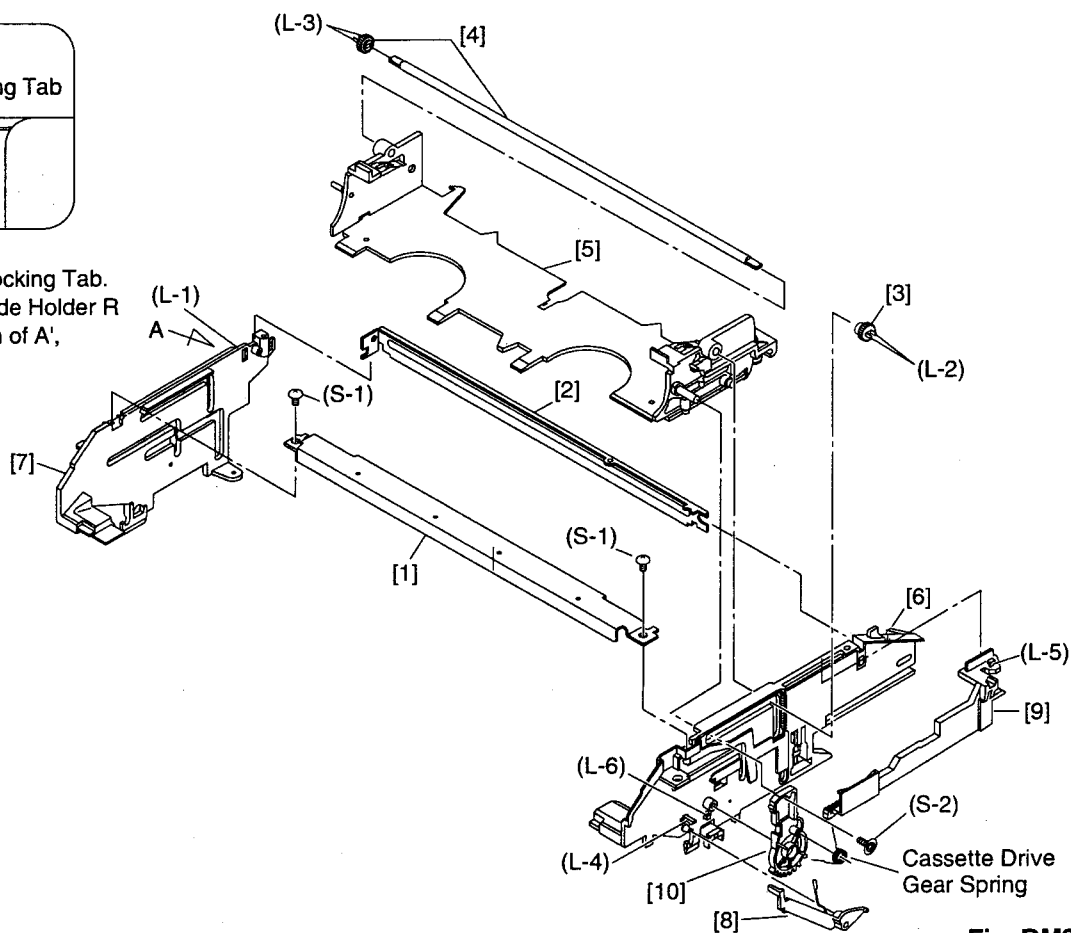


Fig. DM22

ALIGNMENT PROCEDURES OF MECHANISM

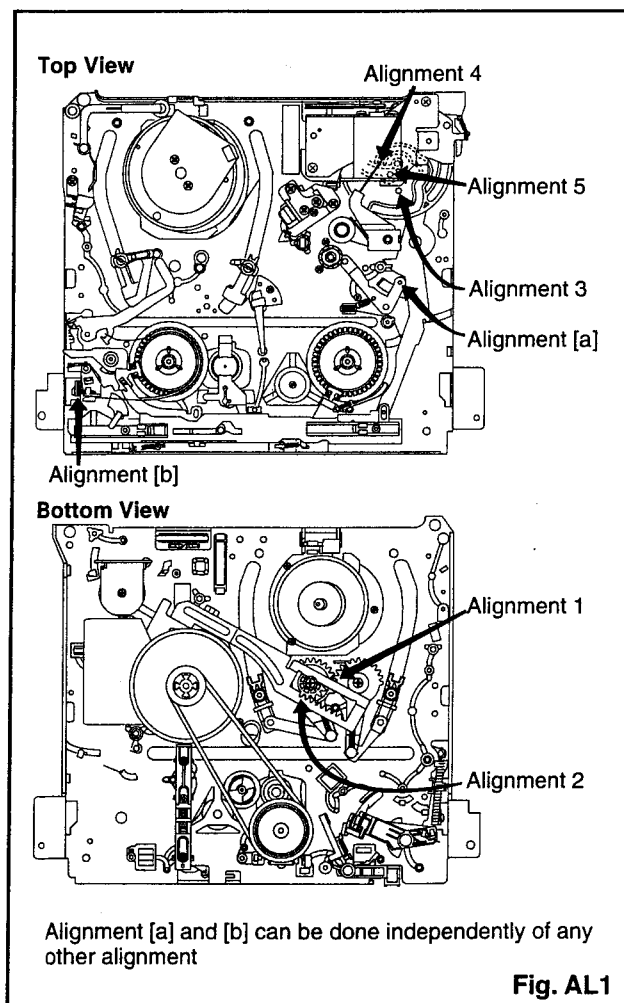
The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position



Alignment 1

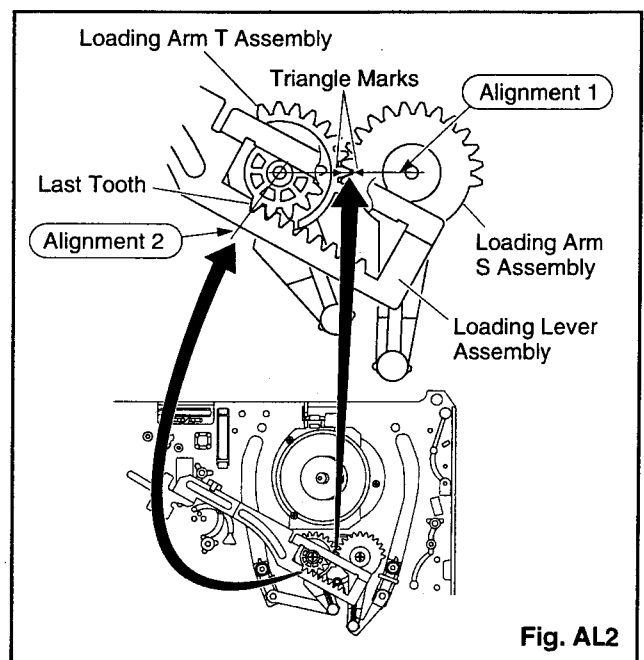
Loading Arm, S and T Assembly

1. Install Loading Arm S and T Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Loading Lever Assembly

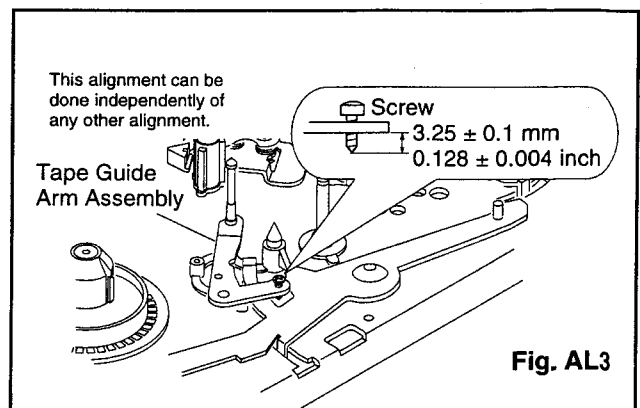
1. Keeping the two triangles pointing at each other, install the Loading Arm T Assembly so that the last tooth of the gear meets the most inside teeth of the Loading Lever Assembly. See Fig. AL2.



Alignment [a]

Tape Guide Arm Assembly

1. Measurement of the screw must be as specified in Fig. AL3.



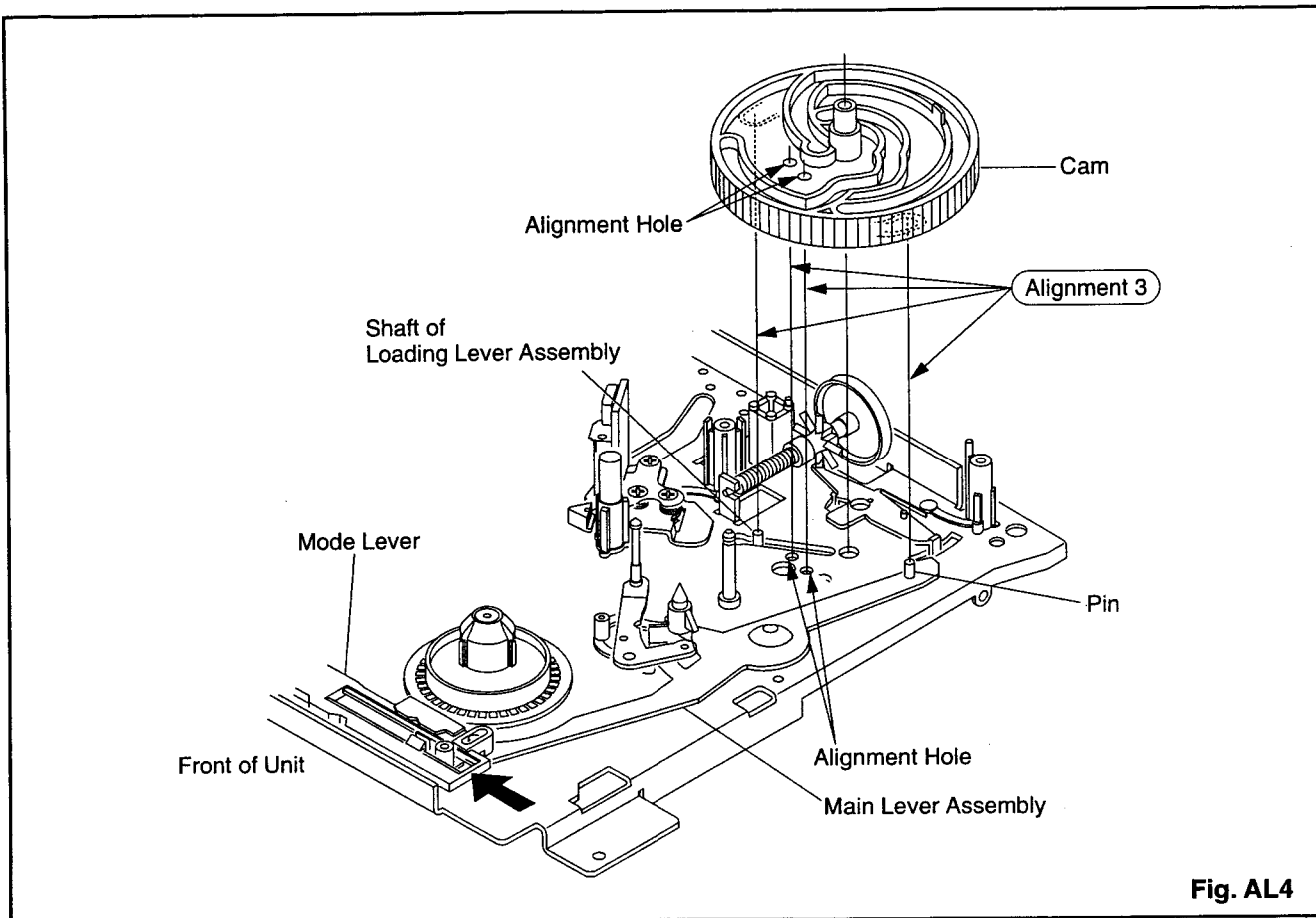


Fig. AL4

Alignment 3

Cam

1. Make sure that the mechanism is in Eject mode so that the shaft of Loading Lever Assembly is in the position shown in Fig. AL4.
2. Align the alignment hole of the Cam with the alignment hole of the base, holding the Cam just above the base.
3. Carefully keeping these two holes aligned, push Mode Lever in the direction of the arrow to install the Cam. The Mode Lever must be pushed to make the pin on the Main Lever Assembly fit in the proper groove in the lower Cam.
4. After installing the Cam, make sure that the alignment hole of the Cam is still aligned with the base hole and that the pin on the Main Lever Assembly and the shaft of the Loading Lever Assembly are inserted into the proper grooves of the lower Cam as specified in Fig. AL4.

Alignment 4

Pinch Roller Assembly

1. Ensure that the Spring of the Pinch Roller Arm Assembly is positioned in the end of the groove of the upper Cam as shown in Fig. AL5.

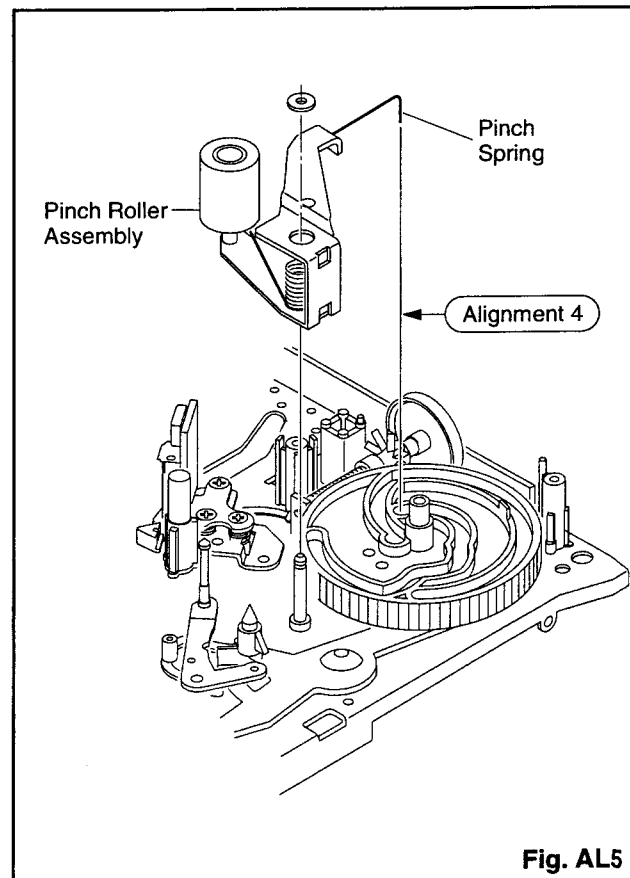
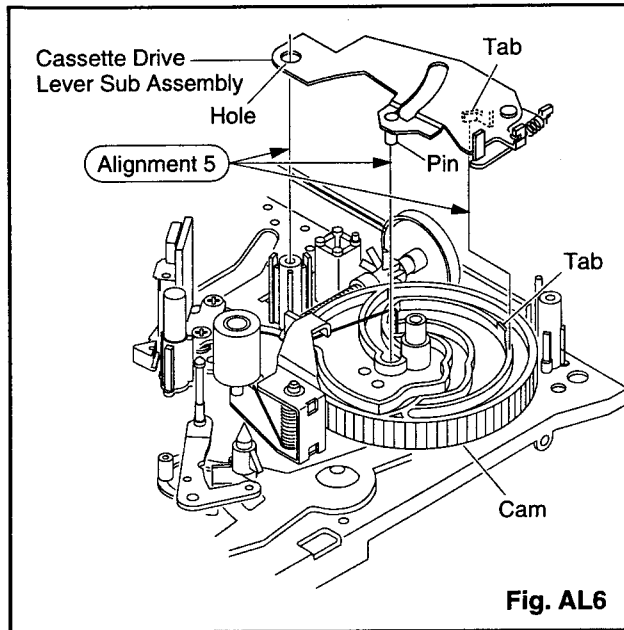


Fig. AL5

Alignment 5

Cassette Drive Lever Sub Assembly

1. Ensure that the pin of the Cassette Drive Lever Sub Assembly is positioned in the groove of the upper Cam and that the hole is positioned as shown in Fig. AL6. Then, make sure that the tab of the Cassette Drive Lever Sub Assembly is outside of the tab of the Cam.

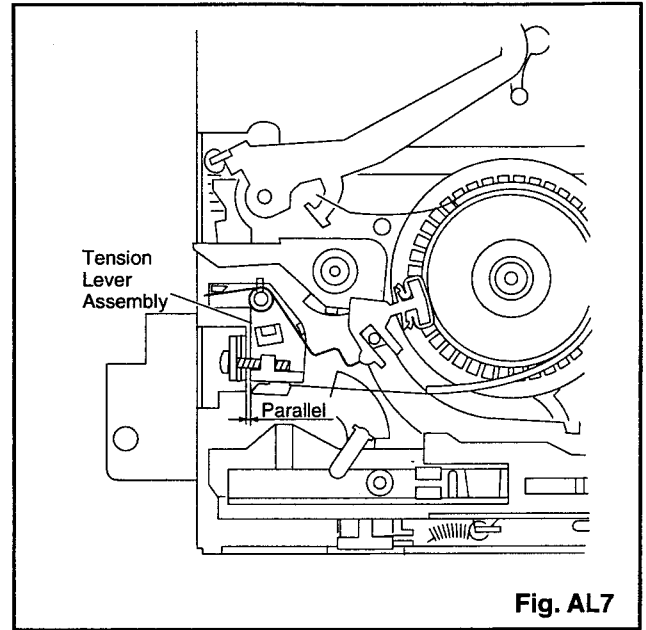


Alignment [b]

This alignment can be performed independently of any other alignment.

Tension Lever Assembly

1. Ensure that Tension Lever Assembly is positioned parallel to the chassis' notch as shown in Fig. AL7. This measurement can be made by eye.



EXPLODED VIEWS AND PARTS LIST SECTION

4 head Hi-Fi VIDEO CASSETTE RECORDER

**19A-600 / 19A-604 /
19A-620 / 19A-624**

**Sec. 3: Exploded Views
and Parts List Section**


- Exploded Views
- Parts List

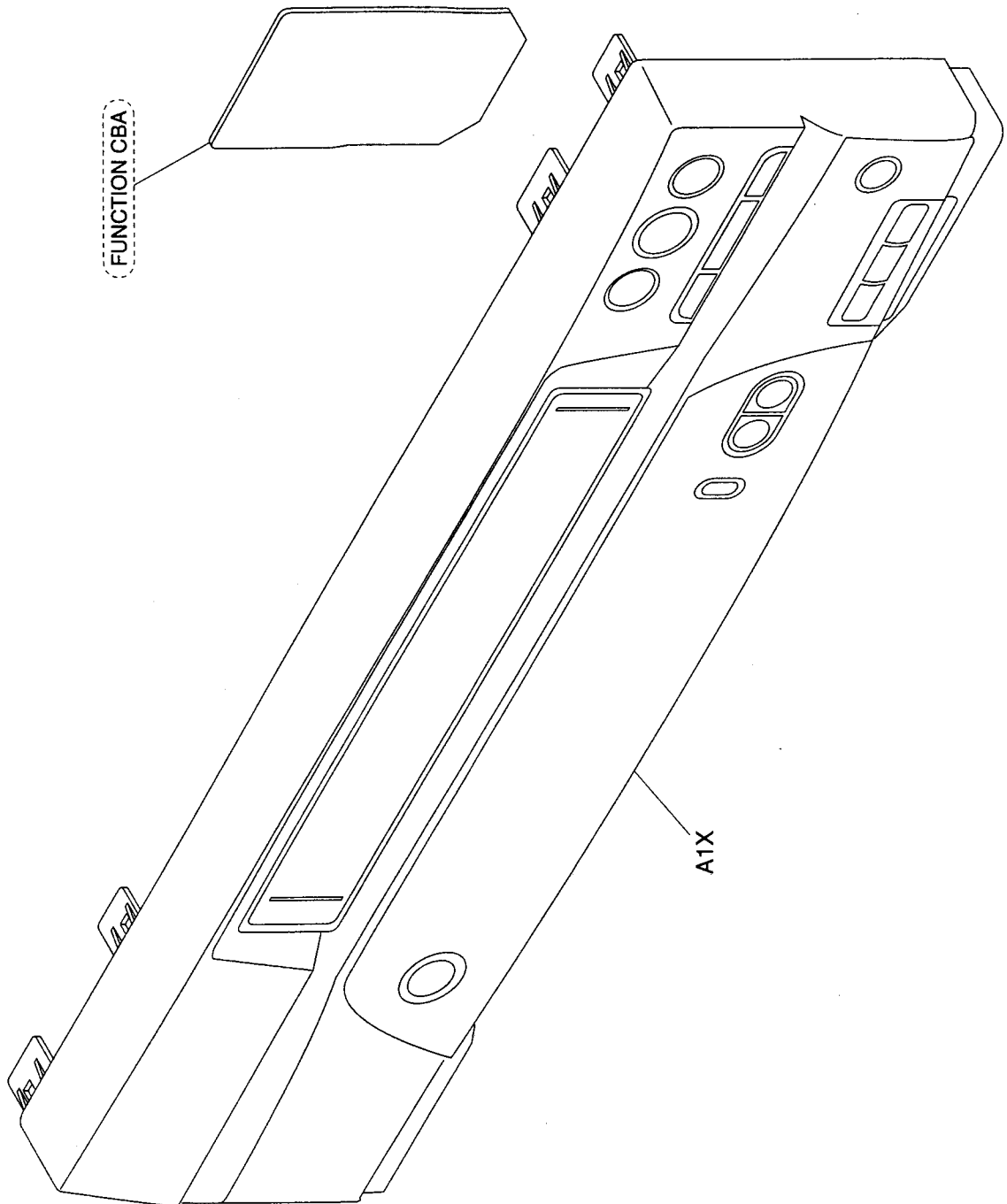
TABLE OF CONTENTS

Exploded Views	3-1-1
Mechanical Parts List.....	3-2-1
Electrical Parts List	3-3-1
Deck Parts List.....	3-4-1

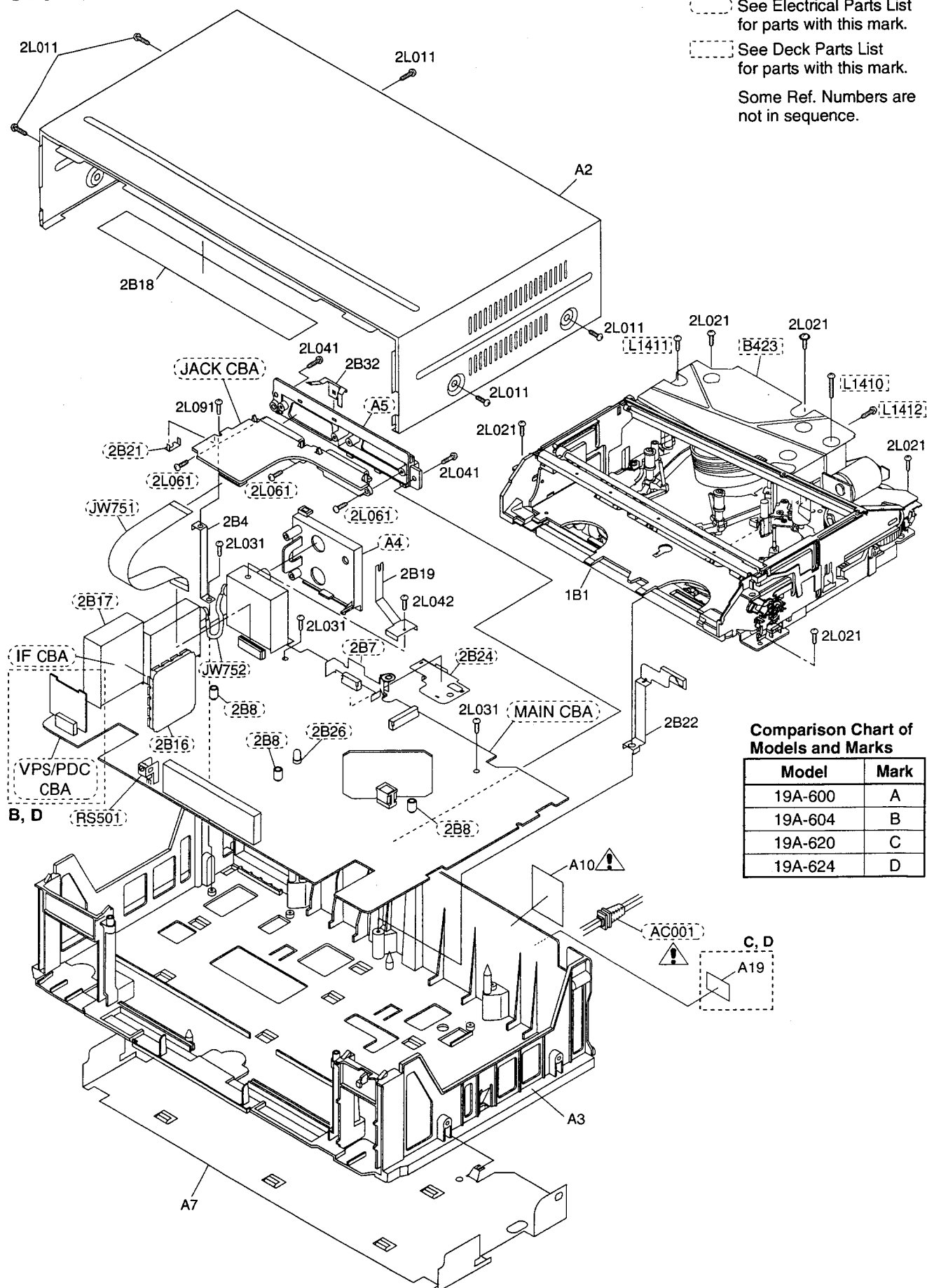
EXPLODED VIEWS

Front Panel

 See Electrical Parts List
for parts with this mark.



Cabinet

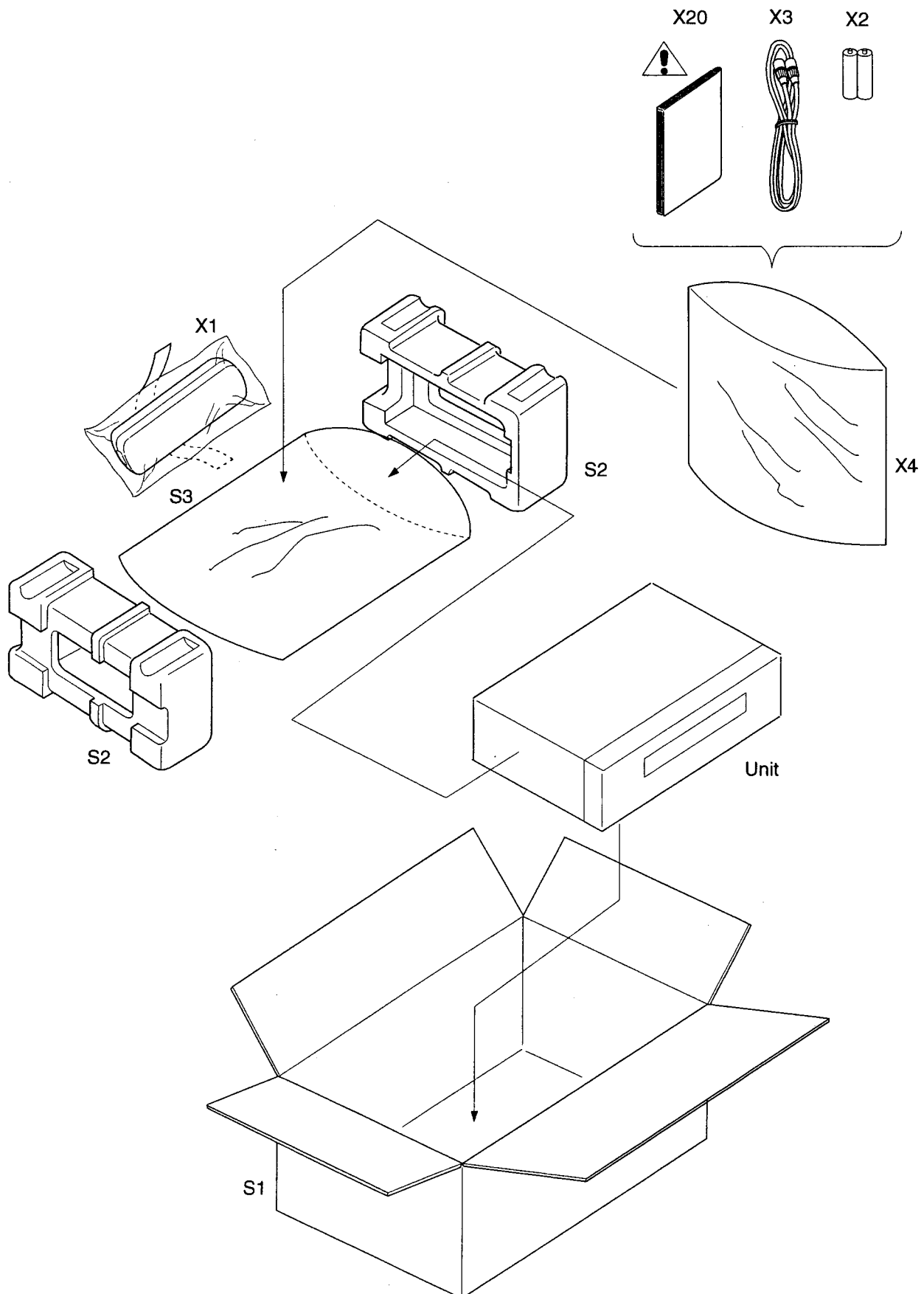


Comparison Chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

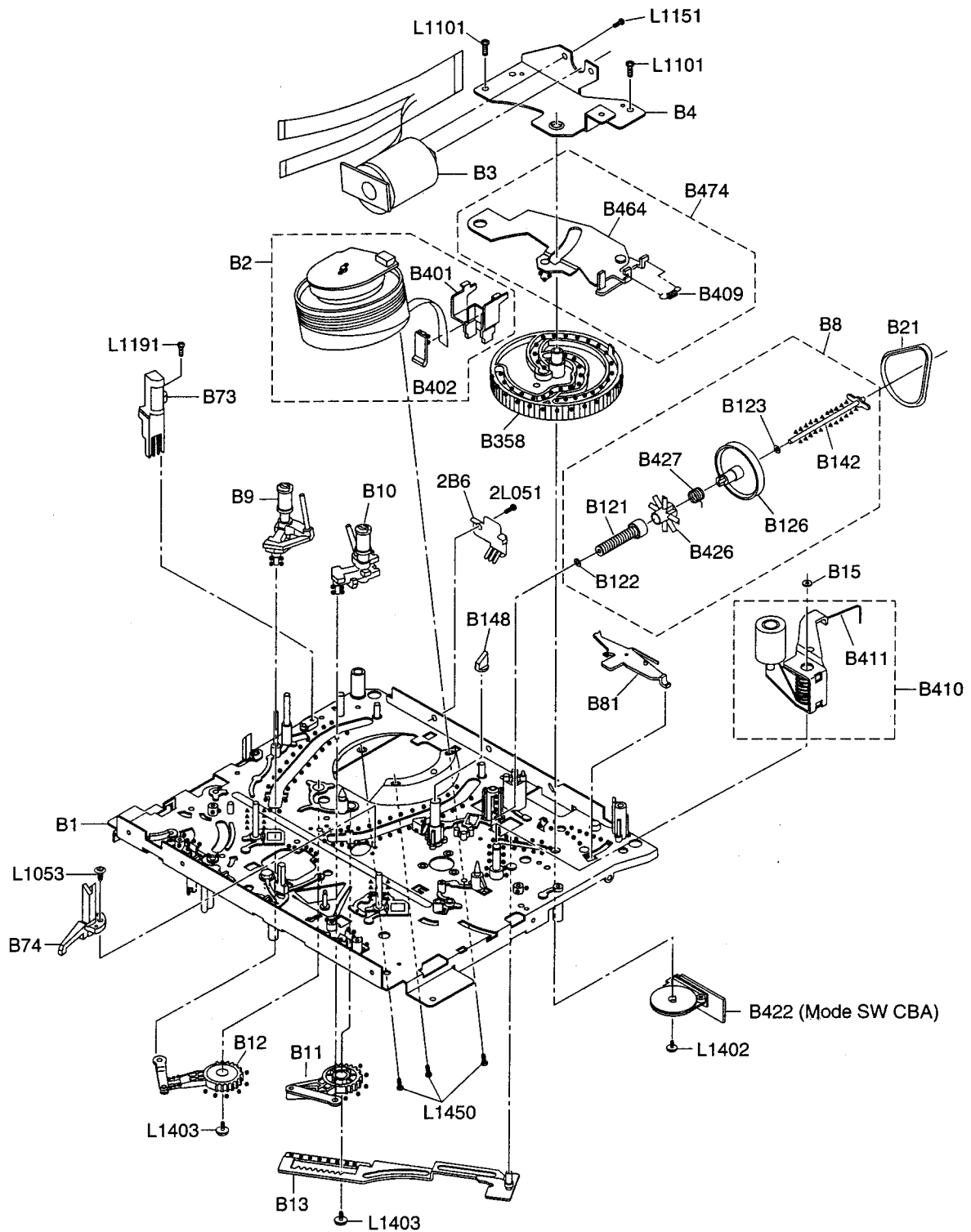
Packing

Some Ref. Numbers are not in sequence.



Deck Mechanism View 1

Mark	Description	Part No.
•••••	Foil G-374G (Blue grease)	0VZZ00109
▲▲▲▲	Hydro-Fluid EP56 (Spindle oil)	0VZZ00068



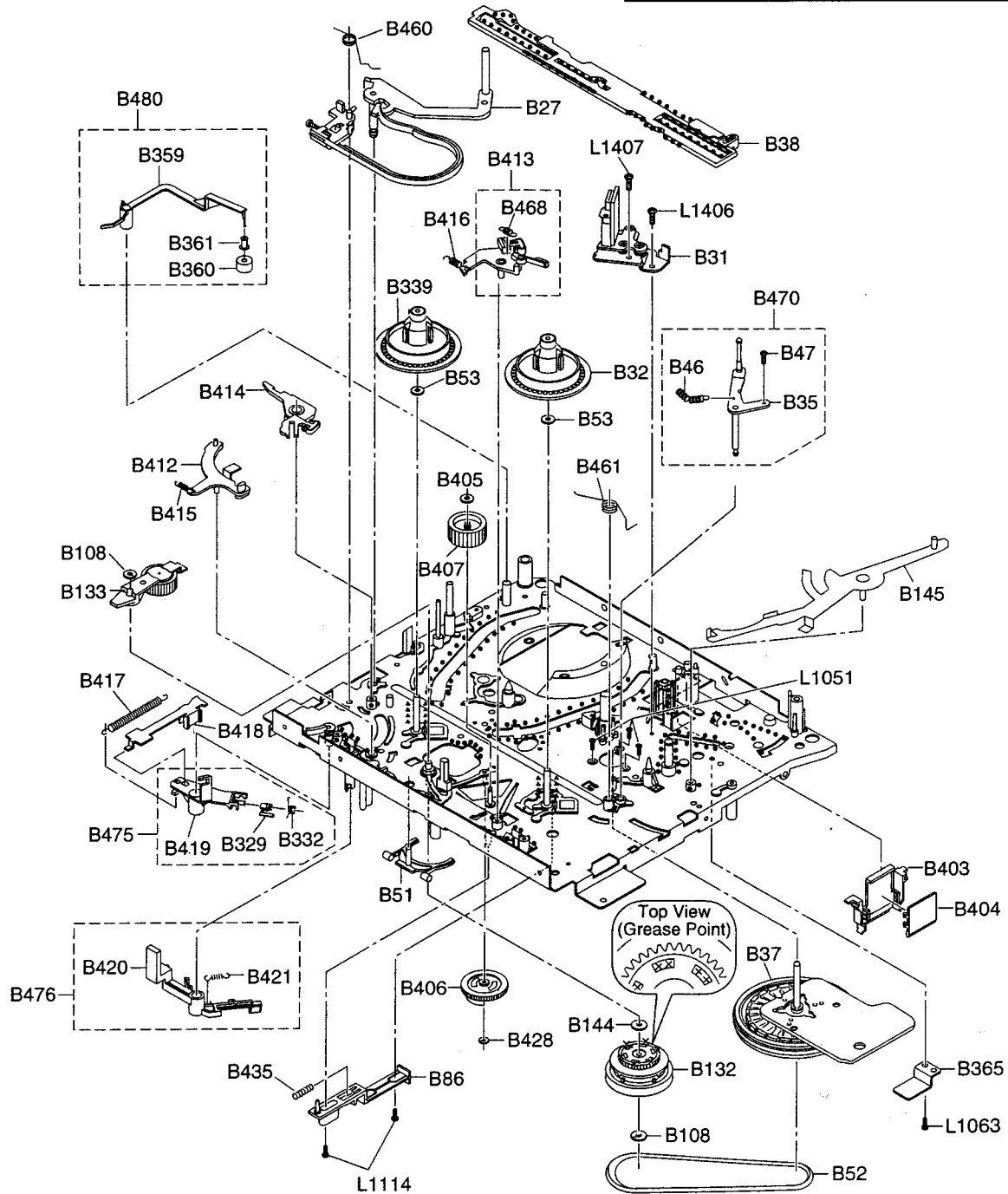
Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

Mark	Description	Part No.
xxxxx	Sankol FG-84M (White grease)	0VZZ00062
.....	Floil G-374G (Blue grease)	0VZZ00109
.....	Hydro-Fluid EP56 (Spindle oil)	0VZZ00068

Note: Three different, but interchangeable, types of Capstan Motor (B37) may be installed in these models. Based on the type of capstan motor, items B365 and L1063 will be used/not used as shown in the table below.

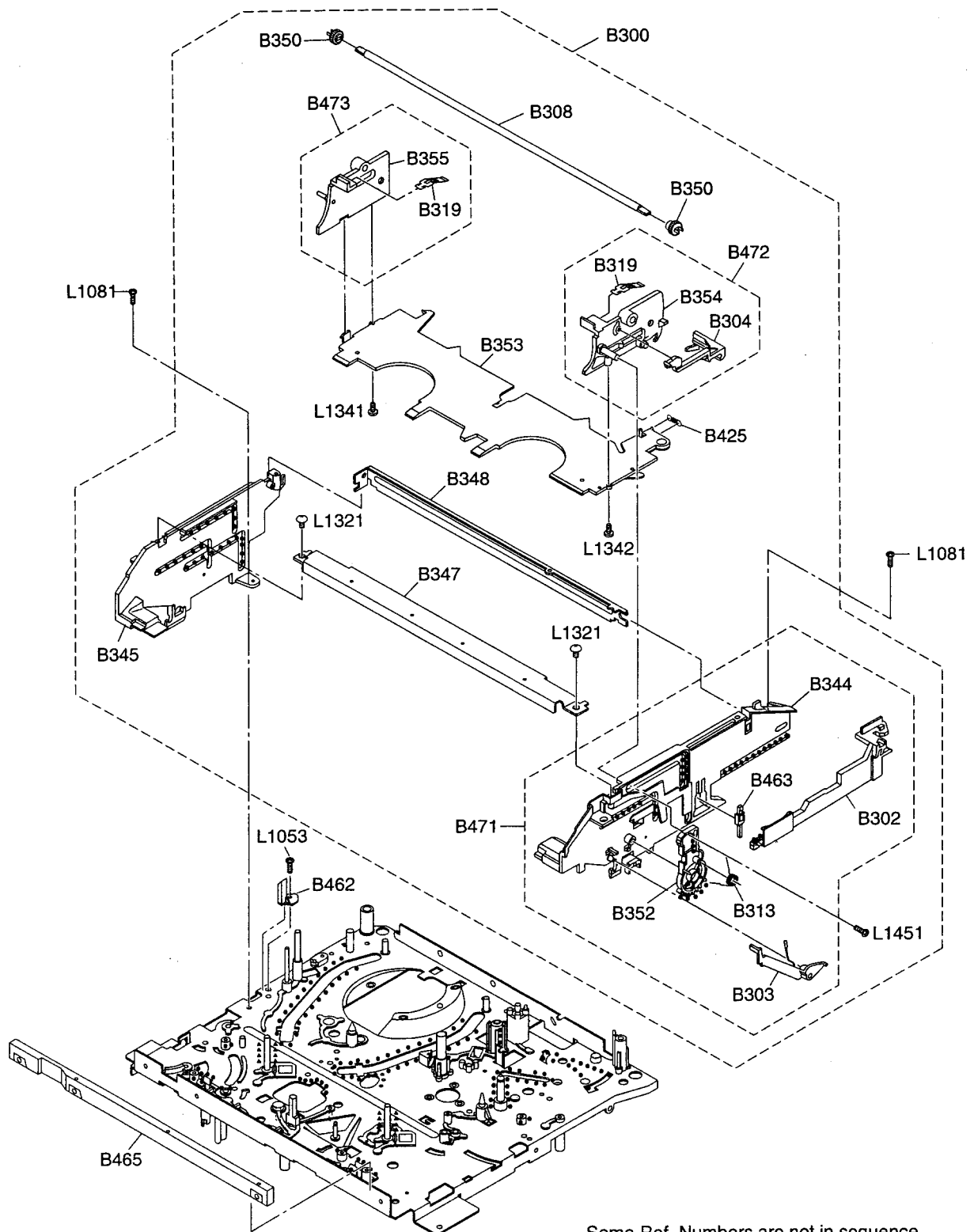
Type	ID No.	B365	L1063
A	MMDZB12SJ007	Not used	Not used
B	MMDZB12SJ006	Not used	Not used
C	N9630CML	Used	Used



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description	Part No.
•••••	Foil G-374G (Blue grease)	0VZZ00109
▲▲▲▲▲	Hydro-Fluid EP56 (Spindle oil)	0VZZ00068



Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Comparison chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

Ref. No.	Mark	Description	Part No.
A1X	A,B	FRONT ASSEMBLY	OVM202567
A1X	C,D	FRONT ASSEMBLY	OVM202568
A2		CASE, TOP(PLATINUM) PLATINUM COLOR	OVM202423
A3		CHASSIS(PLATINUM) PLATINUM COLOR	OVM202424
A4		JACK BOARD(GK) (See Electra Parts List)	
A5		JACK BOARD:2-21P U17 FTZ (See Electra Parts List)	
A7		PANEL, BOTTOM U17 FTZ	OVM202353
A10 Δ	A	LABEL, RATING	OVM409941
A10 Δ	B	LABEL, RATING	OVM409940
A10 Δ	C	LABEL, RATING	OVM409967
A10 Δ	D	LABEL, RATING	OVM409968
A19	C,D	LABEL, SHOW VIEW	OVM407596
AC001 Δ		AC CORD LA-2289 (See Electra Parts List)	
1B1		DECK ASSEMBLY or DECK ASSEMBLY	N8162XK N8162FK
2B4		EARTH PLATE(21P)	OVM409010
2B7		SHIELD, HEAD(U19 PAL) (See Electra Parts List)	
2B8		BUSH, LED(F) (See Electra Parts List)	
2B16		SHIELD, TOP(NICAM) (See Electra Parts List)	
2B17		SHIELD, BOTTOM(NICAM) (See Electra Parts List)	
2B18		FIBER, TOP CASE U15 PAL	OVM408394
2B19		EARTH PLATE(CONV)	OVM409009A
2B21		EARTH PLATE(PCB) (See Electra Parts List)	
2B22		EARTH PLATE(TOP CASE)	OVM409008
2B24		SHIELD, HEAD(BOTTOM) (See Electra Parts List)	
2B26		BUSH, LED(E) (See Electra Parts List)	
2B32		EARTH PLATE(JACK BOARD)	OVM409108
2L011		SCREW, P-TIGHT 3X12 BIND HEAD+	GBCP3120
2L021		SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
2L031		P-TIGHT SCREW 3X8 BIND + CHROME	GBMP3080
2L041		SCREW, P-TIGHT 3X12 BIND HEAD+	GBCP3120
2L042		SCREW M3X3 PAN HEAD +	SPM33030
2L061		P-TIGHT SCREW 3X8 BIND + CHROME (See Electra Parts List)	
2L091		SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
PACKING			
S1	A	GIFT BOX CARTON	OVM303809
S1	B	GIFT BOX CARTON	OVM303810
S1	C	GIFT BOX CARTON	OVM303832
S1	D	GIFT BOX CARTON	OVM303833
S2		STYROFOAM U15 PAL	OVM202137
S3		ACCESSORY BAG 470X560X0.05T	Z547560

Ref. No.	Mark	Description	Part No.
ACCESSORIES			
X1	A,B	REMOTE CONTROL UNIT 364/CRC004	N9241EN
X1	C,D	REMOTE CONTROL UNIT 364/CRC004	N9386EN
X2		DRY BATTERY R6P UM3 or DRY BATTERY R6P or DRY BATTERY R6SSE/2S	XB0M451GH001 XB0M451T0001 XB0M451MS002
X3		RF CORD PAL 1.2M	WPZ0122LG001
X4		ACCESSORY BAG	OVM404632
X20 Δ	A	OWNER'S MANUAL	OVMN02298
X20 Δ	B	OWNER'S MANUAL	OVMN02299
X20 Δ	C	OWNER'S MANUAL	OVMN02314
X20 Δ	D	OWNER'S MANUAL	OVMN02315

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that not assigned part numbers (———) are not available.

Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

Comparison chart of Models and Marks

Model	Mark
19A-600	A
19A-604	B
19A-620	C
19A-624	D

MCV CBA

Ref. No.	Mark	Description	Part No.
	A,B	MCV CBA (Main +Function +IF)	0VSA09775
	C,D	MCV CBA (Main +Function +IF)	0VSA09790
		Consists of the following:	
		MAIN CBA (MCV-A)	———
		FUNCTION CBA (MCV-B)	———
IF701		IF CBA (IFV)	0VSA09777

Main CBA (MCV-A)

Ref. No.	Mark	Description	Part No.
CAPACITORS			
C001 Δ		FILM CAP.(MP) 0.047 μ F/250V M or METALLIZED FILM CAP. 0.047 μ F/250V M	CT2E473DC009 CA2E473MS005
C002 Δ		FILM CAP.(MP) 0.047 μ F/250V M or METALLIZED FILM CAP. 0.047 μ F/250V M	CT2E473DC009 CA2E473MS005
C003 Δ		SAFTY CAP. 2200pF/250V KX or SAFETY CAP. 2200pF/400V M	CCN2EMP0E222 CCN2HMP0E222
C004		ELECTROLYTIC CAP. 22 μ F/400V M or ELECTROLYTIC CAP. 22 μ F/400V M(LNZ)	CA2H220S6006 CA2H220NC010
C005		CERAMIC CAP. B K 0.01 μ F/500V or CERAMIC CAP. 0.01 μ F/500V	CCD2JKP0B103 CA2J103TU001
C006		CERAMIC CAP. SL K 56pF/1KV or CERAMIC CAP. SL J 56pF/1KV or CERAMIC CAP. SL K 56pF/2KV	CCD3AKPSL560 CCD3AJPSL560 CCD3DKPSL560
C007		SEMICONDUCTOR CAP. SR K 0.039 μ F/25V or SEMICONDUCTOR CAP. SR K 0.039 μ F/25V	12Y2393S CDA1EKS0X393
C008		CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332

Ref. No.	Mark	Description	Part No.
C009		CERAMIC CAP.(AX) X K 4700pF/16V	CDA1CKT0X472
C010		SEMICONDUCTOR CAP. SR K 0.022 μ F/25V or SEMICONDUCTOR CAP. SR K 0.022 μ F/25V	12Y2223S CDA1EKS0X223
C014		ELECTROLYTIC CAP. 4.7 μ F/50V M	CE1JMASDL4R7
C015		FILM CAP.(P) 0.0012 μ F/100V J TV or FILM CAP.(P) 0.0012 μ F/100V J or FILM CAP.(P) 0.0012 μ F/100V J	CMB2AJS00122 CMA2AJS00122 1255122S
C016		ELECTROLYTIC CAP. 470 μ F/16V M	CE1CMASDL471
C017		ELECTROLYTIC CAP. 330 μ F/16V M	CE1CMASDL331
C018		ELECTROLYTIC CAP. 22 μ F/50V M	CE1JMASDL220
C019		ELECTROLYTIC CAP. 330 μ F/16V M	CE1CMASDL331
C020		ELECTROLYTIC CAP. 1000 μ F/6.3V M	CE0KMASDL102
C021		ELECTROLYTIC CAP. 100 μ F/10V M	CE1AMASDL101
C022		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C023		SEMICONDUCTOR CAP. SR K 0.022 μ F/25V or SEMICONDUCTOR CAP. SR K 0.022 μ F/25V	12Y2223S CDA1EKS0X223
C024		CERAMIC CAP.(AX) B K 150pF/50V or CERAMIC CAP.(AX) B J 150pF/50V	CCA1JKT0B151 CCA1JJT0B151
C051		CERAMIC CAP.(AX) SL J 15pF/50V	CCA1JJTSL150
C052		ELECTROLYTIC CAP. 0.47 μ F/50V M	CE1JMASDLR47
C053		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C055		CERAMIC CAP.(AX) B K 470pF/50V or CERAMIC CAP.(AX) B J 470pF/50V	CCA1JKT0B471 CCA1JJT0B471
C056		ELECTROLYTIC CAP. 470 μ F/6.3V M	CE0KMASDL471
C057		ELECTRIC DOUBLE LAYER CAP. 0.047F/5.5V Z	CA0J473NE003
C060		ELECTROLYTIC CAP. 47 μ F/10V M	CE1AMASDL470
C062		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C063		CERAMIC CAP.(AX) F Z 0.047 μ F/16V	CDA1CZT0F473
C253		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C255		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C256		CERAMIC CAP.(AX) F Z 0.1 μ F/50V	CCA1JZT0F104
C301		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C302		CERAMIC CAP.(AX) F Z 0.1 μ F/50V	CCA1JZT0F104
C303		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C304		ELECTROLYTIC CAP. 330 μ F/6.3V M H7	CE0KMASSL331
C305		CERAMIC CAP.(AX) F Z 0.1 μ F/50V	CCA1JZT0F104
C306		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C307		CERAMIC CAP.(AX) SL J 33pF/50V	CCA1JJTSL330
C308		CERAMIC CAP.(AX) SL J 22pF/50V	CCA1JJTSL220
C310		CERAMIC CAP.(AX) B J 390pF/50V	CCA1JJT0B391
C311		ELECTROLYTIC CAP. 3.3 μ F/50V M H7	CE1JMASSL3R3
C312		CERAMIC CAP.(AX) SL J 18pF/50V	CCA1JJTSL180
C313		CERAMIC CAP.(AX) SL J 33pF/50V	CCA1JJTSL330
C314		CERAMIC CAP.(AX) B J 180pF/50V	CCA1JJT0B181
C315		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C317		ELECTROLYTIC CAP. 470 μ F/6.3V M	CE0KMASDL471
C318		ELECTROLYTIC CAP. 10 μ F/16V M H7	CE1CMASSL100
C319		ELECTROLYTIC CAP. 22 μ F/10V M H7	CE1AMASSL220
C320		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C321		ELECTROLYTIC CAP. 0.47 μ F/50V M H7	CE1JMASSLR47
C324		CERAMIC CAP.(AX) F Z 0.1 μ F/50V	CCA1JZT0F104
C325		CERAMIC CAP.(AX) SL J 56pF/50V	CCA1JJTSL560
C326		CERAMIC CAP.(AX) F Z 0.1 μ F/50V	CCA1JZT0F104
C327		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C328		ELECTROLYTIC CAP. 47 μ F/6.3V M H7	CE0KMASSL470
C330		CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C331		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C332		ELECTROLYTIC CAP. 10 μ F/16V M H7	CE1CMASSL100
C333		ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010

Ref. No.	Mark	Description	Part No.
C334		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C335		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C336		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C337		CERAMIC CAP. F Z 0.01μF/50V or CERAMIC CAP. YV Z 0.01μF/50V	CCD1JZS0F103 CCD1JZSYV103
C338		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASL470
C339		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C340		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C341		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C342		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C344		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL010
C345		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL010
C346		CERAMIC CAP. F Z 0.022μF/50V or CERAMIC CAP. YV Z 0.022μF/50V	CCD1JZS0F223 CCD1JZSYV223
C348		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL010
C349		CERAMIC CAP.(AX) F Z 0.022μF/25V	CDA1EZT0F223
C351		CERAMIC CAP.(AX) F Z 0.047μF/16V	CDA1CZT0F473
C352		CERAMIC CAP. F Z 0.022μF/50V or CERAMIC CAP. YV Z 0.022μF/50V	CCD1JZS0F223 CCD1JZSYV223
C353		ELECTROLYTIC CAP. 47μF/6.3V M	CE0KMASDL470
C354		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C355		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C357	A,B	CERAMIC CAP.(AX) SL J 10pF/50V	CCA1JJTSL100
C359		CERAMIC CAP.(AX) SL J 33pF/50V	CCA1JJTSL330
C380	A,B	ELECTROLYTIC CAP. 22μF/10V M	CE1AMASDL220
C381	C,D	CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C401		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C403		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C404		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C405		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C406		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASL470
C407		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMASL221
C408		ELECTROLYTIC CAP. 220μF/6.3V M H7	CE0KMASL221
C409		CERAMIC CAP. B K 470pF/100V or CERAMIC CAP. B K 470pF/500V	CCD2AKP0B471 CCD2JKS0B471
C410		FILM CAP.(P) 0.018μF/100V J TV or FILM CAP.(P) 0.018μF/100V J or FILM CAP.(P) 0.018μF/100V J	CMB2AJ00183 CMA2AJ00183 1255183S
C411		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C412		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C413		CERAMIC CAP.(AX) X K 1200pF/16V	CDA1CKT0X122
C414		CERAMIC CAP.(AX) B K 820pF/50V or CERAMIC CAP.(AX) B J 820pF/50V	CDA1JKT0B821 CDA1JJT0B821
C415		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C416		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C417		CERAMIC CAP.(AX) B K 220pF/50V or CERAMIC CAP.(AX) B J 220pF/50V	CCA1JKT0B221 CCA1JJT0B221
C420		ELECTROLYTIC CAP. 22μF/10V M	CE1AMASDL220
C421		ELECTROLYTIC CAP. 33μF/6.3V M	CE0KMASDL330
C422		CERAMIC CAP.(AX) X K 4700pF/16V	CDA1CKT0X472
C451		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C452		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASL010
C453		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMASL220
C454		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C455		SEMICONDUCTOR CAP. SR K 0.01μF/25V or SEMICONDUCTOR CAP. SR K 0.01μF/25V	12Y2103S CDA1EKS0X103
C456		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMASL220
C457		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMASL220
C458		CERAMIC CAP.(AX) X K 4700pF/16V	CDA1CKT0X472
C459		CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C461		CERAMIC CAP.(AX) B K 100pF/50V or CERAMIC CAP.(AX) B J 100pF/50V	CCA1JKT0B101 CCA1JJT0B101



Ref. No.	Mark	Description	Part No.
C462		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C463		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASL010
C464		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C465		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C466		ELECTROLYTIC CAP. 47μF/6.3V M H7	CE0KMASL470
C467		CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C468		CERAMIC CAP.(AX) X K 4700pF/16V	CDA1CKT0X472
C469		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMASL220
C470		SEMICONDUCTOR CAP. SR K 0.01μF/25V or SEMICONDUCTOR CAP. SR K 0.01μF/25V	12Y2103S CDA1EKS0X103
C471		ELECTROLYTIC CAP. 4.7μF/25V M H7	CE1EMASSL4R7
C472		ELECTROLYTIC CAP. 22μF/10V M H7	CE1AMASL220
C473		ELECTROLYTIC CAP. 1μF/50V M H7	CE1JMASL010
C474		ELECTROLYTIC CAP. 47μF/16V M H7	CE1CMASL470
C475		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C476		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C477		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C478		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C501		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C502		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C508		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C509		CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C510		CERAMIC CAP.(AX) B K 220pF/50V or CERAMIC CAP.(AX) B J 220pF/50V	CCA1JKT0B221 CCA1JJT0B221
C511		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JJT0B102
C512		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C513		ELECTROLYTIC CAP. 47μF/6.3V M	CE0KMASDL470
C514		CERAMIC CAP.(AX) B K 100pF/50V or CERAMIC CAP.(AX) B J 100pF/50V	CCA1JKT0B101 CCA1JJT0B101
C515		CERAMIC CAP.(AX) B K 330pF/50V or CERAMIC CAP.(AX) B J 330pF/50V	CCA1JKT0B331 CCA1JJT0B331
C520		CERAMIC CAP.(AX) F Z 0.022μF/25V	CDA1EZT0F223
C521		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C522		CERAMIC CAP.(AX) X K 3300pF/16V	CDA1CKT0X332
C523		CERAMIC CAP.(AX) X K 4700pF/16V	CDA1CKT0X472
C524		CERAMIC CAP.(AX) SL J 27pF/50V	CCA1JJTSL270
C525		CERAMIC CAP.(AX) SL J 27pF/50V	CCA1JJTSL270
C526		ELECTROLYTIC CAP. 100μF/6.3V M H7	CE0KMASL101
C527		CERAMIC CAP.(AX) F Z 0.022μF/25V	CDA1EZT0F223
C529		ELECTROLYTIC CAP. 330μF/6.3V M H7	CE0KMASL331
C530		ELECTROLYTIC CAP. 22μF/10V M	CE1AMASDL220
C531		ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL010
C534		CERAMIC CAP.(AX) SL J 10pF/50V	CCA1JJTSL100
C536		CERAMIC CAP.(AX) X K 1500pF/16V	CDA1CKT0X152
C537		ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C538		ELECTROLYTIC CAP. 33μF/6.3V M H7	CE0KMASL330
C539		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C541		CERAMIC CAP.(AX) F Z 0.047μF/16V	CDA1CZT0F473
C542		CERAMIC CAP.(AX) SL J 10pF/50V	CCA1JJTSL100
C548		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C549		CERAMIC CAP.(AX) F Z 0.022μF/25V	CDA1EZT0F223
C550		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C551		CERAMIC CAP.(AX) B K 330pF/50V or CERAMIC CAP.(AX) B J 330pF/50V	CCA1JKT0B331 CCA1JJT0B331
C554		CERAMIC CAP. F Z 0.01μF/50V or CERAMIC CAP. YV Z 0.01μF/50V	CCD1JZS0F103 CCD1JZSYV103
C558		CERAMIC CAP.(AX) X K 5600pF/16V	CDA1CKT0X562
C602		CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C701		CERAMIC CAP.(AX) F Z 0.047μF/16V	CDA1CZT0F473
C702		CERAMIC CAP.(AX) F Z 0.047μF/16V	CDA1CZT0F473

Ref. No.	Mark	Description	Part No.
C703		ELECTROLYTIC CAP. 10μF/16V M H7	CE1CMASL100
C704		CERAMIC CAP. F Z 0.01μF/50V or CERAMIC CAP. YV Z 0.01μF/50V	CCD1JZS0F103 CCD1JZSYV103
C710		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C711		CERAMIC CAP.(AX) B K 1000pF/50V or CERAMIC CAP.(AX) B J 1000pF/50V	CDA1JKT0B102 CDA1JUT0B102
C713		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C721		CERAMIC CAP.(AX) Y M 0.01μF/16V	CDA1CMT0Y103
C724		ELECTROLYTIC CAP. 470μF/10V M	CE1AMASDL101
C725		ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C851	C,D	CERAMIC CAP.(AX) F Z 0.1μF/50V	CCA1JZT0F104
C854	C,D	CERAMIC CAP.(AX) SL J 15pF/50V	CCA1JJTSL150
C855	C,D	CERAMIC CAP.(AX) SL J 15pF/50V	CCA1JJTSL150
C856	C,D	CERAMIC CAP.(AX) B K 220pF/50V or CERAMIC CAP.(AX) B J 220pF/50V	CCA1JKT0B221 CCA1JUT0B221
C857	C,D	CERAMIC CAP.(AX) B K 220pF/50V or CERAMIC CAP.(AX) B J 220pF/50V	CCA1JKT0B221 CCA1JUT0B221
C858	C,D	CERAMIC CAP.(AX) B K 220pF/50V or CERAMIC CAP.(AX) B J 220pF/50V	CCA1JKT0B221 CCA1JUT0B221
C859	C,D	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C860	C,D	CERAMIC CAP.(AX) SL J 22pF/50V	CCA1JJTSL220
C862	C,D	CERAMIC CAP.(AX) SL J 56pF/50V	CCA1JJTSL560
C863	C,D	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL010
R583		CERAMIC CAP.(AX) B K 100pF/50V or CERAMIC CAP.(AX) B J 100pF/50V	CCA1JKT0B101 CCA1JUT0B101
CONNECTORS			
CN251		FFC CONNECTOR BASE, TOP 9P	JC04J09ER002
CN501		CABLE CONNECTOR, 2P	JCTMC02TG001
CN502		FFC CONNECTOR BASE, TOP 17P	JC04J17ER002
CN503		CONNECTOR, 8P	J3TMA08TG002
CN505		STRAIGHT PIN HEADER, 3P	J391C03ER001
CN751		FFC CONNECTOR BASE, TOP 19P	JC04J19ER002
DIODES			
D001		RECTIFIER DIODE 1N4005 or RECTIFIER DIODE 1N4005	NDQZ001N4005 ND8Z001N4005
D002		RECTIFIER DIODE 1N4005 or RECTIFIER DIODE 1N4005	NDQZ001N4005 ND8Z001N4005
D003		RECTIFIER DIODE 1N4005 or RECTIFIER DIODE 1N4005	NDQZ001N4005 ND8Z001N4005
D004		RECTIFIER DIODE 1N4005 or RECTIFIER DIODE 1N4005	NDQZ001N4005 ND8Z001N4005
D005		RECTIFIER DIODE BA159 or RECTIFIER DIODE ERA22-10	NDQZ000BA159 QDPZ0ERA2210
D006		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D007		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D011		RECTIFIER DIODE BA159 or RECTIFIER DIODE ERA22-10	NDQZ000BA159 QDPZ0ERA2210
D012		FAST RECOVERY DIODE ERB32-01	QDPZ0ERB3201
D013		RECTIFIER DIODE BA159 or RECTIFIER DIODE ERA22-10	NDQZ000BA159 QDPZ0ERA2210
D014		SCHOTTKY BARRIER DIODE RK33 or SCHOTTKY BARRIER DIODE RK34	QDPZ0000RK33 QDPZ0000RK34
D015		FAST RECOVERY DIODE ERA18-04	QDPZ0ERA1804
D017		ZENER DIODE MTZJT-778.2A	QDTA00MTZJ8R2
D051		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D052		ZENER DIODE MTZJT-779.1C	QDTC00MTZJ9R1
D053		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D054		ZENER DIODE MTZJT-776.2B	QDTB00MTZJ6R2

Ref. No.	Mark	Description	Part No.
D055		ZENER DIODE MTZJT-779.1C	QDTC00MTZJ9R1
D056		ZENER DIODE MTZJT-7730A	QDTA00MTZJ30
D057		RECTIFIER DIODE 1N4005 or RECTIFIER DIODE 1N4005	NDQZ001N4005 ND8Z001N4005
D059		ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D301		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D451		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D452		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D503		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D504		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D505		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D506		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
D551		LED SIR-56ST3F-M or LED SIR-56ST3F-N	QPQM0S1R56ST QPQN0S1R56ST
D701		ZENER DIODE MTZJT-7733D	QDTC00MTZJ33
D756		SWITCHING DIODE 1SS133(T-77) or SWITCHING DIODE 1SS254 T-77 or SWITCHING DIODE 1N4148	QDTZ001SS133 A1SS254T77** NDTZ001N4148
ICs			
IC001	△	PHOTOCOUPLER LTV817C or PHOTOCOUPLER LTV817A or PHOTOCOUPLER LTV817B or PHOTOCOUPLER PS2561-1M or PHOTOCOUPLER PS2561-1D or PHOTOCOUPLER PS2561-1H or PHOTOCOUPLER PS2561-1W	NPEC00LTV817 NPEA00LTV817 NPEB00LTV817 QPEM0PS25611 QPED0PS25611 QPEH0PS25611 QPEW0PS25611
IC002		IC KA431Z or IC AN1431T-(NSC) or IC KIA431	NSZLA0ZSM001 QSBLA0ZMS001 NSZLA0ZJY001
IC301		IC:Y/C/A LA71590M	QSBLA0SSY076
IC451		IC:HIFI LA72638M	QSLMA0RSY033
IC501	C,D	MICROCONTROLLER 8BIT CXP88160-138Q	QSMQA0RSN090
IC501	A,B	MICROCONTROLLER 8BIT CXP88140A-109Q or	QSMQB0RSN088
IC501	A,B	MICROCONTROLLER 8BIT CXP88140A-112Q or	QSMQC0RSN088
IC501	A,B	MICROCONTROLLER 8BIT CXP88140A-113Q	QSMQD0RSN088
IC503		IC:OP-AMP. LM324N or IC:OP AMP NJM324D or IC:OP-AMP. KIA324P DIP-14	NSBLA0SS007 QSBLA0JR039 NSBLA0JY002
IC504		IC TA7291S	14LW34
IC505	A,B	IC:MEMORY AT24C02N-10SC or IC(EEPROM) M24C02-MN6 or	NSMMA0SAZ012 NSMMA0SS028
IC505	A,B	IC:MEMORY BR24C02F	QSMMA0SRM003
IC505	C,D	IC:MEMORY BR24C04F or IC:MEMORY AT24C04N-10SC or	QSMMA0SRM004 NSMMA0SAZ013
IC505	C,D	EEPROM IC M24C04-MN6	NSMMA0SS029
IC851	C,D	IC, ON SCREEN LC74783-9173	QSMGA0SSY012
COILS			
L001	△	LINE FILTER 1MH LF-4Z-E102	LLBG00K Q010
L002	△	LINE FILTER 51MH UU10.5-51MH or	LLBG00F 8003

Ref. No.	Mark	Description	Part No.
L003		LINE FILTER 51MH 53230	LLBG00ZKT002
		CHOKE COIL 22μH K or	LLBD00PKV006
		LEAD INDUCTOR 22μH K or	LLARKMPKV220
L004		LEAD INDUCTOR 22μH K	LLARKMUTU220
		CHOKE COIL 22μH K or	LLBD00PKV006
		LEAD INDUCTOR 22μH K or	LLARKMPKV220
		LEAD INDUCTOR 22μH K	LLARKMUTU220
L005		BEAD CORE B16 RH 3.5X10X1.3 or	XL03010XM001
		BEAD CORE HF70BB3.5X10X1.3	XL03010TE001
L006		BEAD CORE B16 RH 3.5X10X1.3 or	XL03010XM001
		BEAD CORE HF70BB3.5X10X1.3	XL03010TE001
L007		BEAD CORE B16 RH 3.5X10X1.3 or	XL03010XM001
		BEAD CORE HF70BB3.5X10X1.3	XL03010TE001
L008		BEAD CORE B16 RH 3.5X10X1.3 or	XL03010XM001
		BEAD CORE HF70BB3.5X10X1.3	XL03010TE001
L011		BEAD CORE B16 RH 3.5X10X1.3 or	XL03010XM001
		BEAD CORE HF70BB3.5X10X1.3	XL03010TE001
L251		PCB JUMPER D0.6-P5.0	JW5.0T
L302		INDUCTOR 47μH K 26T or	LLAXKATTU470
		INDUCTOR 47μH K 26T	LLAXKDTKA470
L303		INDUCTOR 39μH K 26T or	LLAXKATTU390
		INDUCTOR 39μH K 26T	LLAXKDTKA390
L304		INDUCTOR 120μH K 26T or	LLAXKATTU121
		INDUCTOR 120μH K 26T	LLAXKDTKA121
L306		INDUCTOR 47μH K 5FT or	LLARKBSTU470
		INDUCTOR 47μH K 5FT	LLARKDSKA470
L312		INDUCTOR 10μH K 26T or	LLAXKATTU100
		INDUCTOR 10μH K 26T	LLAXKDTKA100
L401		CHOKE COIL 47μH K or	LLBD00PKV005
		CHOKE COIL 47μH K	LLBD00PKV004
L402		INDUCTOR 27μH K 26T or	LLAXKATTU270
		INDUCTOR 27μH K 26T	LLAXKDTKA270
L501		CHOKE COIL 47μH K or	LLBD00PKV005
		CHOKE COIL 47μH K	LLBD00PKV004
L502		CHOKE COIL 47μH K or	LLBD00PKV005
		CHOKE COIL 47μH K	LLBD00PKV004
L504		PCB JUMPER D0.6-P10.0	JW10.0T
L701	A,B	PCB JUMPER D0.6-P5.0	JW5.0T
L701	C,D	INDUCTOR 10μH K 5FT or	LLARKBSTU100
	C,D	INDUCTOR 10μH K 5FT	LLARKDSKA100
L703		CHOKE COIL 47μH K	LLBD00PKV005
L703		CHOKE COIL 47μH K	LLBD00PKV004
L704		CHOKE COIL 47μH K	LLBD00PKV005
L704		CHOKE COIL 47μH K	LLBD00PKV004
L851	C,D	INDUCTOR 27μH K 26T or	LLAXKATTU270
	C,D	INDUCTOR 27μH K 26T	LLAXKDTKA270
L853	C,D	INDUCTOR 22μH K 26T or	LLAXKATTU220
	C,D	INDUCTOR 22μH K 26T	LLAXKDTKA220
J214		INDUCTOR 8.2μH K 26T or	LLAXKATTU8R2
		INDUCTOR 8.2μH K 26T	LLAXKDTKA8R2
TRANSISTORS			
Q001	△	TRANSISTOR 2SC3576	QSZ02SC3576
Q002	△	TRANSISTOR 2SC4517	QPPZ02SC4517
Q051		TRANSISTOR 2SD734F-NP-AQ or	QSF002SD734
		TRANSISTOR 2SD734G-NP-AQ	QSG002SD734
Q052		TRANSISTOR 2SC2785(J) or	QSQJ02SC2785
		TRANSISTOR 2SC2785(H) or	QSH02SC2785
		TRANSISTOR 2SC2785(F) or	QSF02SC2785
		TRANSISTOR 2SC1815-Y(TPE2) or	QSY02SC1815
		TRANSISTOR 2SC1815-GR(TPE2) or	QSI02SC1815
		TRANSISTOR 2SC1740(Q) or	C1740QZ
		TRANSISTOR 2SC1740(R) or	C1740RZ
		TRANSISTOR KTC3199(Y) or	NQSY0KTC3199
		TRANSISTOR KTC3199(GR)	NQSI0KTC3199
Q053		RES. BUILT-IN TRANSISTOR 2SA1654	QSZ02SA1654

Ref. No.	Mark	Description	Part No.
Q054		RES. BUILT-IN TRANSISTOR 2SA1346 or	A1346Z
		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR DTA124ES	A124ESZ
Q055		TRANSISTOR 2SD734F-NP-AQ or	QSF002SD734
		TRANSISTOR 2SD734G-NP-AQ	QSG002SD734
Q056		TRANSISTOR 2SA1015-GR(TPE2) or	QSI02SA1015
		TRANSISTOR 2SA933AS(S) or	QSS2SA933AS
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q057		RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q059		TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
		TRANSISTOR 2SC2120(Y)	QSY02SC2120
Q302		TRANSISTOR KTC3193(Y) or	NQSY0KTC3193
		TRANSISTOR 2SC2058(Q)	QSQ02SC2058
Q303		TRANSISTOR KTC3193(Y) or	NQSY0KTC3193
		TRANSISTOR 2SC2058(Q)	QSQ02SC2058
Q304		TRANSISTOR KTC3193(Y) or	NQSY0KTC3193
		TRANSISTOR 2SC2058(Q)	QSQ02SC2058
Q305		TRANSISTOR 2SA1015-GR(TPE2) or	QSI02SA1015
		TRANSISTOR 2SA933AS(S) or	QSS2SA933AS
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q306		RES. BUILT-IN TRANSISTOR KRC106M-AT or	NQSZ0KRC106M
		RES. BUILT-IN TRANSISTOR KSR1214 or	NQSZ0KSR1214
		RES. BUILT-IN TRANSISTOR 2SC4133	QSZ02SC4133
Q307		TRANSISTOR 2SA1175(J) or	QSI02SA1175
		TRANSISTOR 2SA1175(H) or	QSH02SA1175
		TRANSISTOR 2SA1175(F) or	QSF02SA1175
		TRANSISTOR 2SA933AS(Q) or	QSQ2SA933AS
		TRANSISTOR 2SA933AS(R) or	QSR2SA933AS
		TRANSISTOR KTA1267(Y) or	NQSYOKTA1267
		TRANSISTOR KTA1267(GR) or	NQSIOKTA1267
		TRANSISTOR 2SA608(E) or	QSESA608SPA
		TRANSISTOR 2SA608(F)	QSFSA608SPA
Q401		TRANSISTOR 2SA1015-GR(TPE2) or	QSI02SA1015
		TRANSISTOR 2SA933AS(S) or	QSS2SA933AS
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q402		TRANSISTOR KTC3203(Y) or	NQSYOKTC3203
		TRANSISTOR 2SC2120(Y)	QSY02SC2120
Q403		RES. BUILT-IN TRANSISTOR 2SA1346 or	A1346Z
		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR DTA124ES	A124ESZ
Q404		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U)	QSC3331UNPAA
Q405		TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
		TRANSISTOR 2SC3331(U)	QSC3331UNPAA
Q451		TRANSISTOR KTC3203(Y) or	NQSYOKTC3203
		TRANSISTOR 2SC2120(Y)	QSY02SC2120
Q501		TRANSISTOR 2SA1015-GR(TPE2) or	QSI02SA1015
		TRANSISTOR 2SA933AS(S) or	QSS2SA933AS
		TRANSISTOR KTA1266(GR)	NQS40KTA1266
Q503		PHOTO TRANSISTOR ST-319R2-B	QP480ST319R2
Q504		PHOTO TRANSISTOR ST-319R2-B	QP480ST319R2
Q505		TRANSISTOR 2SC2785(K) or	QSK02SC2785
		TRANSISTOR 2SC1815-BL(TPE2) or	QSZ02SC1815
		TRANSISTOR KTC3199(BL)	NQSI0KTC3199
Q506		RES. BUILT-IN TRANSISTOR DTC124ES or	C124ESZ
		RES. BUILT-IN TRANSISTOR KRC103M	NQSZ0KRC103M
Q508		RES. BUILT-IN TRANSISTOR 2SA1346 or	A1346Z

Ref. No.	Mark	Description	Part No.
Q509		RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
		RES. BUILT-IN TRANSISTOR DTA124ES	A124ESZ
Q514		TRANSISTOR KTC3203(Y) or	NQSY0KTC3203
Q851		TRANSISTOR 2SC2120(Y)	QQSY02SC2120
		PHOTO TRANSISTOR ST-319R2-B	QP4B0ST319R2
	C,D	TRANSISTOR 2SA1175(J) or	QQSJ02SA1175
	C,D	TRANSISTOR 2SA1175(H) or	QQSH02SA1175
	C,D	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	C,D	TRANSISTOR 2SA933AS(Q) or	QQSQ2SA933AS
	C,D	TRANSISTOR 2SA933AS(R) or	QQSR2SA933AS
	C,D	TRANSISTOR KTA1267(Y) or	NQSY0KTA1267
	C,D	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	C,D	TRANSISTOR 2SA608(E) or	QQSESA608SPA
C,D	TRANSISTOR 2SA608(F)	QQSFSA608SPA	
RESISTORS			
R002 		FIXED METAL OXIDE FILM RES. 2W J 82k Ω or	RN02823KE009
		FIXED METAL OXIDE FILM RES. 2W J 82k Ω	RN02823HH012
R003		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R004		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R005		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R006		CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R007		FIXED METAL OXIDE FILM RES. 1W J 150 Ω or	RN01151KE009
		FIXED METAL OXIDE FILM RES. 1W J 150 Ω	RN01151HH007
R011		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R012		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R014		FIXED METAL OXIDE FILM RES. 1W J 1.5 Ω or	RN011R5KE009
		FIXED METAL OXIDE FILM RES. 1W J 1.5 Ω	RN011R5HH007
R016		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R017		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R022		CARBON RES. 1/6W J 470 Ω or	RCX6JATZ0471
		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R023		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R024		CARBON RES. 1/4W G 2.2k Ω or	RCX4GATZ0222
		CARBON RES. 1/6W G 2.2k Ω	RCX6GATZ0222
R025		CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R026		CARBON RES. 1/4W G 2k Ω or	RCX4GATZ0202
		CARBON RES. 1/6W G 2k Ω	RCX6GATZ0202
R027		CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R051		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R052		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R053		CARBON RES. 1/6W J 100 Ω or	RCX6JATZ0101
		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R054		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R055		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R056		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R057		CARBON RES. 1/6W J 560 Ω or	RCX6JATZ0561
		CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R058		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R059		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R060		CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R061		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R062		CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R063		CARBON RES. 1/6W J 56 Ω or	RCX6JATZ0560

Ref. No.	Mark	Description	Part No.
R067		CARBON RES. 1/4W J 56 Ω	RCX4JATZ0560
R253		CARBON RES. 1/6W J 8.2k Ω or CARBON RES. 1/4W J 8.2k Ω	RCX6JATZ0822 RCX4JATZ0822
		CARBON RES. 1/6W J 12k Ω or CARBON RES. 1/4W J 12k Ω	RCX6JATZ0123 RCX4JATZ0123
R256		CARBON RES. 1/6W J 47k Ω or CARBON RES. 1/4W J 47k Ω	RCX6JATZ0473 RCX4JATZ0473
R257		CARBON RES. 1/6W J 3.9k Ω or CARBON RES. 1/4W J 3.9k Ω	RCX6JATZ0392 RCX4JATZ0392
R258		CARBON RES. 1/6W J 6.8k Ω or CARBON RES. 1/4W J 6.8k Ω	RCX6JATZ0682 RCX4JATZ0682
R259		CARBON RES. 1/6W J 6.8k Ω or CARBON RES. 1/4W J 6.8k Ω	RCX6JATZ0682 RCX4JATZ0682
R260		CARBON RES. 1/6W J 6.8k Ω or CARBON RES. 1/4W J 6.8k Ω	RCX6JATZ0682 RCX4JATZ0682
R261		CARBON RES. 1/6W J 6.8k Ω or CARBON RES. 1/4W J 6.8k Ω	RCX6JATZ0682 RCX4JATZ0682
R302		CARBON RES. 1/6W J 15k Ω or CARBON RES. 1/4W J 15k Ω	RCX6JATZ0153 RCX4JATZ0153
R303		CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R304		CARBON RES. 1/6W J 18k Ω or CARBON RES. 1/4W J 18k Ω	RCX6JATZ0183 RCX4JATZ0183
R305		CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R307		CARBON RES. 1/6W J 820 Ω or CARBON RES. 1/4W J 820 Ω	RCX6JATZ0821 RCX4JATZ0821
R308		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R309		CARBON RES. 1/6W J 820 Ω or CARBON RES. 1/4W J 820 Ω	RCX6JATZ0821 RCX4JATZ0821
R310		CARBON RES. 1/6W J 820 Ω or CARBON RES. 1/4W J 820 Ω	RCX6JATZ0821 RCX4JATZ0821
R311		CARBON RES. 1/6W J 390 Ω or CARBON RES. 1/4W J 390 Ω	RCX6JATZ0391 RCX4JATZ0391
R312		CARBON RES. 1/6W J 390 Ω or CARBON RES. 1/4W J 390 Ω	RCX6JATZ0391 RCX4JATZ0391
R313		CARBON RES. 1/6W J 2.7k Ω or CARBON RES. 1/4W J 2.7k Ω	RCX6JATZ0272 RCX4JATZ0272
R314		CARBON RES. 1/6W J 820 Ω or CARBON RES. 1/4W J 820 Ω	RCX6JATZ0821 RCX4JATZ0821
R315		CARBON RES. 1/6W J 560 Ω or CARBON RES. 1/4W J 560 Ω	RCX6JATZ0561 RCX4JATZ0561
R316		CARBON RES. 1/6W J 100 Ω or CARBON RES. 1/4W J 100 Ω	RCX6JATZ0101 RCX4JATZ0101
R317		CARBON RES. 1/6W J 1.5k Ω or CARBON RES. 1/4W J 1.5k Ω	RCX6JATZ0152 RCX4JATZ0152
R318		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R319		CARBON RES. 1/6W J 1.5k Ω or CARBON RES. 1/4W J 1.5k Ω	RCX6JATZ0152 RCX4JATZ0152
R320		CARBON RES. 1/6W J 100k Ω or CARBON RES. 1/4W J 100k Ω	RCX6JATZ0104 RCX4JATZ0104
R322	A,B	CARBON RES. 1/4W J 2.2k Ω or CARBON RES. 1/6W J 2.2k Ω	RCX4JATZ0222 RCX6JATZ0222
R322	C,D	CARBON RES. 1/6W J 2.4k Ω or CARBON RES. 1/4W J 2.4k Ω	RCX6JATZ0242 RCX4JATZ0242
R323	C,D	CARBON RES. 1/6W J 2.7k Ω or CARBON RES. 1/4W J 2.7k Ω	RCX6JATZ0272 RCX4JATZ0272
R324		CARBON RES. 1/6W J 22k Ω or CARBON RES. 1/4W J 22k Ω	RCX6JATZ0223 RCX4JATZ0223
R325		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R326		CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R327		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R328		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R329		CARBON RES. 1/6W J 8.2k Ω or CARBON RES. 1/4W J 8.2k Ω	RCX6JATZ0822 RCX4JATZ0822
R330		CARBON RES. 1/6W J 390 Ω or	RCX6JATZ0391

Ref. No.	Mark	Description	Part No.
R331	A,B	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
	A,B	CARBON RES. 1/4W J 220 Ω or	RCX4JATZ0221
R331	C,D	CARBON RES. 1/6W J 220 Ω	RCX6JATZ0221
R334		PCB JUMPER D0.6-P5.0	JW5.0T
		CARBON RES. 1/6W J 1.8k Ω or	RCX6JATZ0182
		CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R335		CARBON RES. 1/6W J 1.5k Ω or	RCX6JATZ0152
		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R336		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R341		CARBON RES. 1/4W J 33k Ω or	RCX4JATZ0333
		CARBON RES. 1/6W J 33k Ω	RCX6JATZ0333
R401		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R402		CARBON RES. 1/6W J 6.8k Ω or	RCX6JATZ0682
		CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R403		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R404		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R405		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R406		CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R408		CARBON RES. 1/6W J 47k Ω or	RCX6JATZ0473
		CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R409		CARBON RES. 1/6W J 100 Ω or	RCX6JATZ0101
		CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R410		CARBON RES. 1/6W J 820 Ω or	RCX6JATZ0821
		CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R411		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R412		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R413		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R414		CARBON RES. 1/6W J 12k Ω or	RCX6JATZ0123
		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R415		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R416		CARBON RES. 1/6W J 12k Ω or	RCX6JATZ0123
		CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R417		CARBON RES. 1/6W J 330k Ω or	RCX6JATZ0334
		CARBON RES. 1/4W J 330k Ω	RCX4JATZ0334
R418		CARBON RES. 1/6W J 120 Ω or	RCX6JATZ0121
		CARBON RES. 1/4W J 120 Ω	RCX4JATZ0121
R419		CARBON RES. 1/6W J 27k Ω or	RCX6JATZ0273
		CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R420		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R421		CARBON RES. 1/6W J 2.7k Ω or	RCX6JATZ0272
		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R422		CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R425		CARBON RES. 1/6W J 2.2M Ω or	RCX6JATZ0225
		CARBON RES. 1/4W J 2.2M Ω	RCX4JATZ0225
R453		CARBON RES. 1/6W J 470 Ω or	RCX6JATZ0471
		CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R454		CARBON RES. 1/6W J 2.7k Ω or	RCX6JATZ0272
		CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R455		CARBON RES. 1/6W J 220k Ω or	RCX6JATZ0224
		CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R456		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R457		PCB JUMPER D0.6-P5.0	JW5.0T
R460		CARBON RES. 1/6W J 39k Ω or	RCX6JATZ0393
		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R461		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R462		CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223

Ref. No.	Mark	Description	Part No.
R463		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R464		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R465		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R466		CARBON RES. 1/6W J 8.2k Ω or	RCX6JATZ0822
		CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R467		CARBON RES. 1/6W J 39k Ω or	RCX6JATZ0393
		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R501		CARBON RES. 1/6W J 680k Ω or	RCX6JATZ0684
		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R502		CARBON RES. 1/6W J 680k Ω or	RCX6JATZ0684
		CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R503		CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R504		CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R505		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R506		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R507		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R508		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R513		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R515		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R516		CARBON RES. 1/6W J 330k Ω or	RCX6JATZ0334
		CARBON RES. 1/4W J 330k Ω	RCX4JATZ0334
R517		CARBON RES. 1/6W J 56k Ω or	RCX6JATZ0563
		CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R518		CARBON RES. 1/6W J 27k Ω or	RCX6JATZ0273
		CARBON RES. 1/4W J 27k Ω	RCX4JATZ0273
R519		CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R521		CARBON RES. 1/6W J 270 Ω or	RCX6JATZ0271
		CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R522		CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R523		CARBON RES. 1/6W J 1.2k Ω or	RCX6JATZ0122
		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R524		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R525		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R526		CARBON RES. 1/6W J 560k Ω or	RCX6JATZ0564
		CARBON RES. 1/4W J 560k Ω	RCX4JATZ0564
R529		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R530		CARBON RES. 1/6W J 39k Ω or	RCX6JATZ0393
		CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R531		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R532		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R533		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R534		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R538		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R539		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R541		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R542	C,D	CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
	C,D	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R545		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R548		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103

Ref. No.	Mark	Description	Part No.
R552		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
R555	C,D	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
	C,D	CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
R558		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
R561		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
R562		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
R563		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R566		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R568		CARBON RES. 1/6W J 1.2k Ω or	RCX6JATZ0122
		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R569		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R570		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R571		PCB JUMPER D0.6-P5.0	JW5.0T
R572		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R573		CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R574		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R575		CARBON RES. 1/6W J 22k Ω or	RCX6JATZ0223
		CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R577		CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R578		CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R579		CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R580		CARBON RES. 1/6W J 220 Ω or	RCX6JATZ0221
		CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R581		CARBON RES. 1/6W J 1.5k Ω or	RCX6JATZ0152
		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R582		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R584		CARBON RES. 1/6W J 1.8k Ω or	RCX6JATZ0182
		CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R585		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R586		CARBON RES. 1/6W J 1.2k Ω or	RCX6JATZ0122
		CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R587		CARBON RES. 1/6W J 1.5k Ω or	RCX6JATZ0152
		CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R595		CARBON RES. 1/4W J 4.7k Ω	RCX4JATZ0472
R597		CARBON RES. 1/6W J 47 Ω or	RCX6JATZ0470
		CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R598		CARBON RES. 1/4W G 4.7k Ω or	RCX4GATZ0472
		CARBON RES. 1/6W G 4.7k Ω	RCX6GATZ0472
R601	C,D	CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
	C,D	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R606		CARBON RES. 1/6W J 100k Ω or	RCX6JATZ0104
		CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R608		PCB JUMPER D0.6-P5.0	JW5.0T
R610		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R612		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R616		PCB JUMPER D0.6-P5.0	JW5.0T
R701		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R702		CARBON RES. 1/6W J 10k Ω or	RCX6JATZ0103
		CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R703		CARBON RES. 1/6W J 2.2k Ω or	RCX6JATZ0222
		CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R706		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R707		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102

Ref. No.	Mark	Description	Part No.
R714		CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R752		CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R851	C,D	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R852	C,D	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R853	C,D	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R854	C,D	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R855	C,D	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
SWITCHES			
SW501		TACT SWITCH KSM0614B or	SST0101HH013
		TACT SWITCH SKQSAF001A	SST0101AL041
SW502		TACT SWITCH KSM0614B or	SST0101HH013
		TACT SWITCH SKQSAF001A	SST0101AL041
SW504		TACT SWITCH KSM0614B or	SST0101HH013
		TACT SWITCH SKQSAF001A	SST0101AL041
SW505		TACT SWITCH KSM0614B or	SST0101HH013
		TACT SWITCH SKQSAF001A	SST0101AL041
SW506		PUSH SWITCH SPPB61066A	SSP0102AL001
SW507		TACT SWITCH KSM0611B	SST0101HH004
MISCELLANEOUS			
2B7		SHIELD, HEAD(U19 PAL)	0VM303717
2B8		BUSH, LED(F)	0VM409508
2B24		SHIELD, HEAD(BOTTOM)	0VM409732
2B26		BUSH, LED(E)	0VM408832
A4		JACK BOARD(GK)	0VM303673
AC001 Δ		AC CORD LA-2289	WAE0172LW002
F001 Δ		FUSE T1.6AL/250V or	PAGC20BW3162
Δ		FUSE T1.6AL/250V	1790994
FH001		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078-1	XH01Z00DK002
FH002		FUSE HOLDER MSF-015 or	XH01Z00LY001
		FUSE HOLDER FH-V-03078-1	XH01Z00DK002
FP501	A,B	F.I.P. 10-BT-119G	TVFD1C0FT024
FP501	C,D	F.I.P. 25U34111BAN	TVFD1C0FT033
JW751		FFC CABLE 19P or	WX1H4705-001
		FFC CABLE 19P	WX1H2605-001
JW752		RF CORD LA-2290-1	WPZ0600LW001
MD701		RF MODULATOR(PAL-G) NJH3032G201	URFCPLGJR002
RS501		REMOTE RECEIVER PIC-26042LU or	USESJR9CK022
		REMOTE RECEIVER NJL65V367B	USESJR9R013
T001 Δ		PULSE TRANS A0724B S1629	LTT00EP5A030
TP301		PCB JUMPER D0.6-P27.5	JW27.5T
TP302		PCB JUMPER D0.6-P7.5	JW7.5T
TP303		PCB JUMPER D0.6-P15.0	JW15.0T
TP501		PCB JUMPER D0.6-P10.0	JW10.0T
TP502		PCB JUMPER D0.6-P10.0	JW10.0T
TP505		PCB JUMPER D0.6-P5.0	JW5.0T
TP506		PCB JUMPER D0.6-P5.0	JW5.0T
TP507		PCB JUMPER D0.6-P5.0	JW5.0T
TP751		PCB JUMPER D0.6-P5.0	JW5.0T
TP752		PCB JUMPER D0.6-P12.5	JW12.5T
TP754		PCB JUMPER D0.6-P10.0	JW10.0T
TU701		TUNER UNIT UVE25-EW61D	UTUNPLBAM006
VR501		CARBON P.O.T. 100k Ω B(H) or	VRCB104IH009
		CARBON P.O.T. 100k Ω B	VRCB104IA011
X302		X'TAL 4.433619MHZ or	1811388
		X'TAL 4.433619MHZ	FXC445LNL001
X501		X'TAL 32.768KHZ or	FXB323LIS002
		X'TAL 32KHZ(10PPM)	1811351
X502		X'TAL 13.300857MHZ or	FXE136LIS001
		X'TAL 13.300857MHZ or	FXD136LNL001
		X'TAL 13.300857MHZ	FXD136LCT003

Function CBA (MCV-B)

Ref. No.	Description	Part No.
Function CBA (MCV-B)		
CONNECTOR		
CN651	ANGLE SOCKET CONNECTOR, 3P	JC91B03ER001
RESISTORS		
R651	CARBON RES. 1/6W J 1.8k Ω or CARBON RES. 1/4W J 1.8k Ω	RCX6JATZ0182 RCX4JATZ0182
R652	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R653	CARBON RES. 1/6W J 1.2k Ω or CARBON RES. 1/4W J 1.2k Ω	RCX6JATZ0122 RCX4JATZ0122
R654	CARBON RES. 1/6W J 1.5k Ω or CARBON RES. 1/4W J 1.5k Ω	RCX6JATZ0152 RCX4JATZ0152
R655	CARBON RES. 1/6W J 2.2k Ω or CARBON RES. 1/4W J 2.2k Ω	RCX6JATZ0222 RCX4JATZ0222
R656	CARBON RES. 1/6W J 3.9k Ω or CARBON RES. 1/4W J 3.9k Ω	RCX6JATZ0392 RCX4JATZ0392
R657	CARBON RES. 1/6W J 2.2k Ω or CARBON RES. 1/4W J 2.2k Ω	RCX6JATZ0222 RCX4JATZ0222
R658	CARBON RES. 1/6W J 3.9k Ω or CARBON RES. 1/4W J 3.9k Ω	RCX6JATZ0392 RCX4JATZ0392
R659	CARBON RES. 1/6W J 8.2k Ω or CARBON RES. 1/4W J 8.2k Ω	RCX6JATZ0822 RCX4JATZ0822
R660	CARBON RES. 1/6W J 22k Ω or CARBON RES. 1/4W J 22k Ω	RCX6JATZ0223 RCX4JATZ0223
SWITCHES		
SW651	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW652	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW653	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW654	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW655	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW656	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW657	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW658	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW659	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041
SW660	TACT SWITCH KSM0614B or TACT SWITCH SKQSAF001A	SST0101HH013 SST0101AL041

IF CBA (IFV)

Ref. No.	Description	Part No.
IF701	IF CBA (IFV)	0VSA09777
CAPACITORS		
C02	CHIP CERAMIC CAP. CH J 27pF/50V	CHE1JJ3CH270
C03	CHIP CERAMIC CAP. CH J 27pF/50V	CHE1JJ3CH270
C04	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C08	CHIP CERAMIC CAP. CH J 15pF/50V	CHE1JJ3CH150
C09	CHIP CERAMIC CAP. PH J 12pF/50V	CHE1JJ3PH120
C10	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C11	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C13	CHIP CERAMIC CAP. B K 0.022 μ F/50V	CHE1JK30B223
C15	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C16	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C17	CHIP CERAMIC CAP. B K 8200pF/50V	CHE1JK30B822
C18	CHIP CERAMIC CAP. CK C 1pF/50V	CHE1JC3CK1R0
C19	CHIP CERAMIC CAP. CJ C 3pF/50V	CHE1JC3CJ3R0
C20	CHIP CERAMIC CAP. CK C 1pF/50V	CHE1JC3CK1R0
C21	CHIP CERAMIC CAP. CK C 1pF/50V	CHE1JC3CK1R0

Ref. No.	Description	Part No.
C31	CHIP CERAMIC CAP. B K 0.022 μ F/50V	CHE1JK30B223
C32	CHIP CERAMIC CAP. B K 0.022 μ F/50V	CHE1JK30B223
C33	CHIP CERAMIC CAP. B K 0.1 μ F/25V	CHE1EK30B104
C34	CHIP CERAMIC CAP. CH J 33pF/50V	CHE1JJ3CH330
C36	CHIP CERAMIC CAP. CH J 100pF/50V	CHE1JJ3CH101
C41	CHIP CERAMIC CAP. CH J 150pF/50V	CHE1JJ3CH151
C42	CHIP CERAMIC CAP. B K 0.1 μ F/25V	CHE1EK30B104
C43	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C44	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C45	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C46	CHIP CERAMIC CAP. B K 0.1 μ F/25V	CHE1EK30B104
C47	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C49	CHIP RES. 1/10W J 1.8k Ω or CHIP RES. 1/8W J 1.8k Ω	RRXAJR6Z0182 RRX8JR6Z0182
C50	CHIP RES. 1/10W J 1.8k Ω or CHIP RES. 1/8W J 1.8k Ω	RRXAJR6Z0182 RRX8JR6Z0182
C52	CHIP CERAMIC CAP. CH J 15pF/50V	CHE1JJ3CH150
C61	ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C62	ELECTROLYTIC CAP. 10 μ F/16V M H7	CE1QMASSL100
C63	ELECTROLYTIC CAP. 0.47 μ F/50V M H7	CE1JMASSLR47
C64	ELECTROLYTIC CAP. 4.7 μ F/50V M H7	CE1JMASSLR47
C65	ELECTROLYTIC CAP. 0.47 μ F/50V M H7	CE1JMASSLR47
C81	FILM CAP.(PP) 1500pF/100V J	2231152
C82	ELECTROLYTIC CAP. 2.2 μ F/50V M H7	CE1JMASSL2R2
C91	ELECTROLYTIC CAP. 2.2 μ F/50V M H7	CE1JMASSL2R2
C92	ELECTROLYTIC CAP. 2.2 μ F/50V M H7	CE1JMASSL2R2
C93	ELECTROLYTIC CAP. 10 μ F/16V M H7	CE1QMASSL100
C94	ELECTROLYTIC CAP. 100 μ F/10V M H7	CE1JMASSL101
C95	ELECTROLYTIC CAP. 2.2 μ F/50V M H7	CE1JMASSL2R2
C96	ELECTROLYTIC CAP. 2.2 μ F/50V M H7	CE1JMASSL2R2
C97	ELECTROLYTIC CAP. 100 μ F/10V M H7	CE1JMASSL101
CONNECTORS		
CN01	ANGLE PIN HEADER, 7P	5700067
CN31	ANGLE PIN HEADER, 5P	5700065
DIODES		
D41	ZENER DIODE MTZJT-776.8B	QDTB0MTZJ6R8
ICS		
IC01	IC LA7565E	QSBIA0SSY079
IC31	IC TBA120U	NSBLA0SPH010
IC41	IC TDA9845/V2	NSBLA0SPH008
COILS		
L01	INDUCTOR 15 μ H J 26T or INDUCTOR 15 μ H J 26T	LLAX.ATTU150 LLAX.IDTKA150
L02	INDUCTOR 10 μ H J 26T or INDUCTOR 10 μ H J 26T	LLAX.ATTU100 LLAX.IDTKA100
L31	INDUCTOR 2.2 μ H J 26T or INDUCTOR 2.2 μ H J 26T	LLAX.ATTU2R2 LLAX.IDTKA2R2
T01	COIL KY641R	LFA07/0LH013
T02	COIL KY640R	LFA07/0LH012
T03	COIL KY640R	LFA07/0LH012
T31	COIL S-061-5025	117D555
T41	COIL FB-7LG	LFA07/0SF129
TRANSISTORS		
Q01	TRANSISTOR 2SA1317(S) or TRANSISTOR 2SA1317(T)	A1317SZ A1317TZ
Q31	TRANSISTOR 2SC2785(J) or TRANSISTOR 2SC2785(H) or TRANSISTOR 2SC2785(F) or TRANSISTOR 2SC1815-Y(TPE2) or TRANSISTOR 2SC1815-GR(TPE2) or TRANSISTOR 2SC1740(Q) or TRANSISTOR 2SC1740(R) or TRANSISTOR KTC3199(Y) or TRANSISTOR KTC3199(GR)	QQSJ2SC2785 QQSH2SC2785 QQSF2SC2785 QQSY2SC1815 QQSG2SC1815 C1740QZ C1740RZ NQSJKTC3199 NQSJKTC3199
RESISTORS		
R01	CHIP RES. 1/10W J 10k Ω or	RRXAJR6Z0103

Ref. No.	Description	Part No.
R02	CHIP RES.(2125TYPE) 1/8W J 10k Ω	RRX8JR6Z0103
	CHIP RES. 1/10W J 330 Ω or	RRXAJR6Z0331
	CHIP RES.(2125TYPE) 1/8W J 330 Ω	RRX8JR6Z0331
R03	CHIP RES. 1/10W J 68 Ω or	RRXAJR6Z0680
	CHIP RES.(2125TYPE) 1/8W J 68 Ω	RRX8JR6Z0680
R06	CHIP RES. 1/10W J 220 Ω or	RRXAJR6Z0221
	CHIP RES.(2125TYPE) 1/8W J 220 Ω	RRX8JR6Z0221
R07	CHIP RES. 1/10W J 180 Ω or	RRXAJR6Z0181
	CHIP RES.(2125TYPE) 1/8W J 180 Ω	RRX8JR6Z0181
R08	CHIP RES. 1/10W J 330 Ω or	RRXAJR6Z0331
	CHIP RES.(2125TYPE) 1/8W J 330 Ω	RRX8JR6Z0331
R09	CHIP RES. 1/10W J 150k Ω or	RRXAJR6Z0154
	CHIP RES. 1/8W J 150k Ω	RRX8JR6Z0154
R10	CHIP RES. 1/10W J 82k Ω or	RRXAJR6Z0823
	CHIP RES. 1/8W J 82k Ω	RRX8JR6Z0823
R11	CHIP RES. 1/10W J 120k Ω or	RRXAJR6Z0124
	CHIP RES. 1/8W J 120k Ω	RRX8JR6Z0124
R12	CHIP RES. 1/10W J 120k Ω or	RRXAJR6Z0124
	CHIP RES. 1/8W J 120k Ω	RRX8JR6Z0124
R13	CHIP RES. 1/10W J 8.2k Ω or	RRXAJR6Z0822
	CHIP RES. 1/8W J 8.2k Ω	RRX8JR6Z0822
R14	CHIP RES. 1/10W J 6.8k Ω or	RRXAJR6Z0682
	CHIP RES. 1/8W J 6.8k Ω	RRX8JR6Z0682
R16	CHIP RES. 1/10W J 4.7k Ω or	RRXAJR6Z0472
	CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRX8JR6Z0472
R17	CHIP RES. 1/10W J 2.2k Ω or	RRXAJR6Z0222
	CHIP RES.(2125TYPE) 1/8W J 2.2k Ω	RRX8JR6Z0222
R19	CHIP RES. 1/10W J 100 Ω or	RRXAJR6Z0101
	CHIP RES.(2125TYPE) 1/8W J 100 Ω	RRX8JR6Z0101
R20	CHIP RES. 1/10W J 270 Ω or	RRXAJR6Z0271
	CHIP RES. 1/8W J 270 Ω	RRX8JR6Z0271
R21	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
R24	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
R29	CHIP RES. 1/10W J 10k Ω or	RRXAJR6Z0103
	CHIP RES.(2125TYPE) 1/8W J 10k Ω	RRX8JR6Z0103
R31	CHIP RES. 1/10W J 1k Ω or	RRXAJR6Z0102
	CHIP RES.(2125TYPE) 1/8W J 1k Ω	RRX8JR6Z0102
R33	CHIP RES. 1/10W J 4.7k Ω or	RRXAJR6Z0472
	CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRX8JR6Z0472
R34	CHIP RES. 1/10W J 12k Ω or	RRXAJR6Z0123
	CHIP RES.(2125TYPE) 1/8W J 12k Ω	RRX8JR6Z0123
R35	CHIP RES. 1/10W J 3.9k Ω or	RRXAJR6Z0392
	CHIP RES.(2125TYPE) 1/8W J 3.9k Ω	RRX8JR6Z0392
R36	CHIP RES. 1/10W J 47k Ω or	RRXAJR6Z0473
	CHIP RES.(2125TYPE) 1/8W J 47k Ω	RRX8JR6Z0473
R37	CHIP RES. 1/10W J 12k Ω or	RRXAJR6Z0123
	CHIP RES.(2125TYPE) 1/8W J 12k Ω	RRX8JR6Z0123
R38	CHIP RES. 1/10W J 4.7k Ω or	RRXAJR6Z0472
	CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRX8JR6Z0472
R39	CHIP RES. 1/10W J 1.5k Ω or	RRXAJR6Z0152
	CHIP RES. 1/8W J 1.5k Ω	RRX8JR6Z0152
R41	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
R42	CHIP RES. 1/10W J 1.5k Ω or	RRXAJR6Z0152
	CHIP RES. 1/8W J 1.5k Ω	RRX8JR6Z0152
R43	CHIP RES. 1/10W J 10k Ω or	RRXAJR6Z0103
	CHIP RES.(2125TYPE) 1/8W J 10k Ω	RRX8JR6Z0103
R45	CHIP RES. 1/10W J 3.9k Ω or	RRXAJR6Z0392
	CHIP RES.(2125TYPE) 1/8W J 3.9k Ω	RRX8JR6Z0392
R46	CHIP RES. 1/10W J 3.9k Ω or	RRXAJR6Z0392
	CHIP RES.(2125TYPE) 1/8W J 3.9k Ω	RRX8JR6Z0392
R47	CHIP RES. 1/10W J 2.7k Ω or	RRXAJR6Z0272
	CHIP RES.(2125TYPE) 1/8W J 2.7k Ω	RRX8JR6Z0272
R48	CHIP RES. 1/10W J 180 Ω or	RRXAJR6Z0181

Ref. No.	Description	Part No.
C49	CHIP RES.(2125TYPE) 1/8W J 180 Ω	RRX8JR6Z0181
	CHIP RES. 1/10W J 3.9k Ω or	RRXAJR6Z0392
	CHIP RES.(2125TYPE) 1/8W J 3.9k Ω	RRX8JR6Z0392
C50	CHIP RES. 1/10W J 3.9k Ω or	RRXAJR6Z0392
	CHIP RES.(2125TYPE) 1/8W J 3.9k Ω	RRX8JR6Z0392
J01	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J02	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J04	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J05	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J06	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J07	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J31	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
J32	CHIP RES. 1/10W 0 Ω or	RRXAZR6Z0000
	CHIP RES.(2125TYPE) 1/8W 0 Ω	RRX8JR6Z0000
MISCELLANEOUS		
2B16	SHIELD, TOP(NICAM)	0VM303423
2B17	SHIELD, BOTTOM(NICAM)	0VM303424
F01	SAW FILTER TSF5355T	FBB386PSY008
F02	CERAMIC FILTER 5.5MHZ	FBB555PMR004
F03	CERAMIC TRAP 5.5MHZ/5.74MHZ	FBE575PMS004
F31	CERAMIC FILTER 5.742MHZ	FBB575PMR001
VR01	CARBON P.O.T. 22k Ω B or	VRCB223KA012
	CARBON P.O.T. 22k Ω B	138A961
VR31	CARBON P.O.T. 5k Ω B(H) or	VRCB502HH009
	CARBON P.O.T. 5k Ω B	VRCB502KA011
VR41	CARBON P.O.T. 5k Ω B(H) or	VRCB502HH009
	CARBON P.O.T. 5k Ω B	VRCB502KA011
X41	X'TAL 10.000MHZ	FXD106LDS001

Jack CBA (JCV)

Ref. No.	Description	Part No.
Jack CBA (JCV)		0VSA09757
CAPACITORS		
C901	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C902	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C903	CHIP CERAMIC CAP. B K 470pF/50V	CHE1JK30B471
C904	CHIP CERAMIC CAP. B K 470pF/50V	CHE1JK30B471
C907	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C909	CHIP CERAMIC CAP. B K 2200pF/50V	CHE1JK30B222
C914	CHIP CERAMIC CAP. F Z 0.1 μ F/50V	CHE1JZ30F104
C915	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C916	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C917	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C918	ELECTROLYTIC CAP. 1 μ F/50V M H7	CE1JMASSL010
C919	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C920	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C921	ELECTROLYTIC CAP. 4.7 μ F/25V M H7	CE1EMASSL4R7
C922	ELECTROLYTIC CAP. 4.7 μ F/25V M H7	CE1EMASSL4R7
C923	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C924	ELECTROLYTIC CAP. 470 μ F/6.3V M	CE0KMASDL471
C925	CHIP CERAMIC CAP. CK C 1pF/50V	CHE1JC3CK1R0
C926	CHIP CERAMIC CAP. B K 470pF/50V	CHE1JK30B471
C927	ELECTROLYTIC CAP. 470 μ F/6.3V M	CE0KMASDL471
C928	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C929	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C930	ELECTROLYTIC CAP. 4.7 μ F/25V M H7	CE1EMASSL4R7
C931	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C932	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7

Ref. No.	Description	Part No.
C933	ELECTROLYTIC CAP. 4.7 μ F/25V M H7	CE1EMASSL4R7
C934	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C935	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C936	ELECTROLYTIC CAP. 47 μ F/10V M	CE1AMASDL470
C937	CHIP CERAMIC CAP. B K 0.01 μ F/50V	CHE1JK30B103
C938	ELECTROLYTIC CAP. 330 μ F/6.3V M	CE0KMASDL331
C939	ELECTROLYTIC CAP. 47 μ F/16V M	CE1CMASDL470
C941	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7
C942	CHIP CERAMIC CAP. CH J 100pF/50V	CHE1JJ3CH101
C943	CHIP CERAMIC CAP. CH J 100pF/50V	CHE1JJ3CH101
C944	CHIP CERAMIC CAP. CH J 100pF/50V	CHE1JJ3CH101
C945	CHIP CERAMIC CAP. CH J 220pF/50V	CHE1JJ3CH221
C946	CHIP CERAMIC CAP. CH J 220pF/50V	CHE1JJ3CH221
C947	CHIP CERAMIC CAP. CH J 220pF/50V	CHE1JJ3CH221
C948	CHIP CERAMIC CAP. CH J 150pF/50V	CHE1JJ3CH151
C949	CHIP CERAMIC CAP. CH J 220pF/50V	CHE1JJ3CH221
C950	CHIP CERAMIC CAP. B K 1000pF/50V	CHE1JK30B102
C951	CHIP CERAMIC CAP. B K 470pF/50V	CHE1JK30B471
C953	CHIP CERAMIC CAP. CH J 56pF/50V	CHE1JJ3CH560
CONNECTOR		
CN901	FFC CONNECTOR BASE, SIDE 19P	JC04J19ER001
DIODES		
D901	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D902	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D903	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D904	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D905	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D906	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D907	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D908	ZENER DIODE MTZJT-775.1A or ZENER DIODE MTZJT-775.1B or ZENER DIODE MTZJT-775.1C	QDTA0MTZJ5R1 QDTB0MTZJ5R1 QDTC0MTZJ5R1
D911	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D912	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D913	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D914	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D915	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D916	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D917	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D918	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D919	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
D920	ZENER DIODE MTZJT-7711A	QDTA00MTZJ11
IC		
IC901	IC LA7157M-TRM	QSMLA0TSY030
TRANSISTOR		
Q903	RES. BUILT-IN TRANSISTOR DTC124ES or RES. BUILT-IN TRANSISTOR KRC103M	C124ESZ NQSZ0KRC103M
RESISTORS		
R901	CHIP RES. 1/10W J 820 Ω or CHIP RES.(2125TYPE) 1/8W J 820 Ω	RRXAJR6Z0821 RRX8JR6Z0821
R902	CHIP RES. 1/10W J 820 Ω or CHIP RES.(2125TYPE) 1/8W J 820 Ω	RRXAJR6Z0821 RRX8JR6Z0821

Ref. No.	Description	Part No.
R903	CHIP RES. 1/10W J 4.7k Ω or CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRXAJR6Z0472 RRX8JR6Z0472
R904	CHIP RES. 1/10W J 4.7k Ω or CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRXAJR6Z0472 RRX8JR6Z0472
R905	CHIP RES. 1/10W J 75 Ω or CHIP RES.(2125TYPE) 1/8W J 75 Ω	RRXAJR6Z0750 RRX8JR6Z0750
R906	CHIP RES. 1/10W J 75 Ω or CHIP RES.(2125TYPE) 1/8W J 75 Ω	RRXAJR6Z0750 RRX8JR6Z0750
R907	CHIP RES. 1/10W J 820 Ω or CHIP RES.(2125TYPE) 1/8W J 820 Ω	RRXAJR6Z0821 RRX8JR6Z0821
R908	CHIP RES. 1/10W J 820 Ω or CHIP RES.(2125TYPE) 1/8W J 820 Ω	RRXAJR6Z0821 RRX8JR6Z0821
R909	CHIP RES. 1/10W J 4.7k Ω or CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRXAJR6Z0472 RRX8JR6Z0472
R910	CHIP RES. 1/10W J 4.7k Ω or CHIP RES.(2125TYPE) 1/8W J 4.7k Ω	RRXAJR6Z0472 RRX8JR6Z0472
R911	CHIP RES. 1/10W J 75 Ω or CHIP RES.(2125TYPE) 1/8W J 75 Ω	RRXAJR6Z0750 RRX8JR6Z0750
R912	CHIP RES. 1/10W J 75 Ω or CHIP RES.(2125TYPE) 1/8W J 75 Ω	RRXAJR6Z0750 RRX8JR6Z0750
R914	CHIP RES. 1/10W J 1.5k Ω or CHIP RES. 1/8W J 1.5k Ω	RRXAJR6Z0152 RRX8JR6Z0152
R920	CHIP RES. 1/10W 0 Ω or CHIP RES.(2125TYPE) 1/8W 0 Ω	RRXAZR6Z0000 RRX8JR6Z0000
R921	CHIP RES. 1/10W J 75 Ω or CHIP RES.(2125TYPE) 1/8W J 75 Ω	RRXAJR6Z0750 RRX8JR6Z0750
R922	CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R926	CARBON RES. 1/6W J 150 Ω or CARBON RES. 1/4W J 150 Ω	RCX6JATZ0151 RCX4JATZ0151
R927	CARBON RES. 1/6W J 150 Ω or CARBON RES. 1/4W J 150 Ω	RCX6JATZ0151 RCX4JATZ0151
R928	CARBON RES. 1/6W J 150 Ω or CARBON RES. 1/4W J 150 Ω	RCX6JATZ0151 RCX4JATZ0151
R929	CARBON RES. 1/6W J 150 Ω or CARBON RES. 1/4W J 150 Ω	RCX6JATZ0151 RCX4JATZ0151
R930	CHIP RES. 1/10W 0 Ω or CHIP RES.(2125TYPE) 1/8W 0 Ω	RRXAZR6Z0000 RRX8JR6Z0000
R932	CHIP RES. 1/10W 0 Ω or CHIP RES.(2125TYPE) 1/8W 0 Ω	RRXAZR6Z0000 RRX8JR6Z0000R930
D909	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
J919	CARBON RES. 1/6W J 10 Ω or CARBON RES. 1/4W J 10 Ω	RCX6JATZ0100 RCX4JATZ0100
MISCELLANEOUS		
2B21	EARTH PLATE(PCB)	0VM409082
2L061	SCREW, P-TIGHT 3X8 BIND + CHROME	GBMP3080
A5	JACK BOARD:2-21P U17 FTZ	0VM202356
JK901	SKIRT JACK 21P HRC-21V-02P or SKIRT JACK 21P HXC1536-010011 or SKIRT JACK, 21P CSS5021-1001	JXGL210RP001 JSZZ000HD001 1780260
JK902	SKIRT JACK 21P HRC-21V-02P or SKIRT JACK 21P HXC1536-010011 or SKIRT JACK, 21P CSS5021-1001	JXGL210RP001 JSZZ000HD001 1780260

VPS/PDC CBA

(19A-604/19A-624 Model only)

Ref. No.	Description	Part No.
VPS/PDC CBA		0VSA09607
CAPACITORS		
C639	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C642	SEMICONDUCTOR CAP. SR K 0.056 μ F/25V or SEMICONDUCTOR CAP. SR K 0.056 μ F/25V	12Y2563S CDA1EKS0X563
C643	ELECTROLYTIC CAP. 4.7 μ F/25V M	CE1EMASDL4R7

Ref. No.	Description	Part No.
C644	ELECTROLYTIC CAP. 47 μ F/6.3V M	CE0KMASDL470
C645	CERAMIC CAP.(AX) Y M 0.01 μ F/16V	CDA1CMT0Y103
C648	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
C649	ELECTROLYTIC CAP. 1 μ F/50V M	CE1JMASDL010
CONNECTOR		
CN640	ANGLE PIN HEADER, 9P	5700069
IC		
IC640	IC/VPS,PDC LC74793	QSMIA0SSY032
COIL		
L641	INDUCTOR 10 μ H K 26T or INDUCTOR 10 μ H K 26T	LLAXKATTU100 LLAXKDTKA100
TRANSISTORS		
Q640	TRANSISTOR KTA1267(GR)	NQS10KTA1267
Q641	TRANSISTOR KTC3193(Y) or TRANSISTOR 2SC2058(Q)	NQSY0KTC3193 QQSQ02SC2058
RESISTORS		
R637	CARBON RES. 1/6W J 3.9k Ω or CARBON RES. 1/4W J 3.9k Ω	RCX6JATZ0392 RCX4JATZ0392
R638	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R639	CARBON RES. 1/6W J 180k Ω or CARBON RES. 1/4W J 180k Ω	RCX6JATZ0184 RCX4JATZ0184
R641	CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R642	CARBON RES. 1/6W J 2.7k Ω or CARBON RES. 1/4W J 2.7k Ω	RCX6JATZ0272 RCX4JATZ0272
R643	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R644	CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R645	CARBON RES. 1/6W J 10k Ω or CARBON RES. 1/4W J 10k Ω	RCX6JATZ0103 RCX4JATZ0103
R646	CARBON RES. 1/6W J 240 Ω or CARBON RES. 1/4W J 240 Ω	RCX6JATZ0241 RCX4JATZ0241
R647	CARBON RES. 1/6W J 560 Ω or CARBON RES. 1/4W J 560 Ω	RCX6JATZ0561 RCX4JATZ0561
R648	CARBON RES. 1/6W J 390 Ω or CARBON RES. 1/4W J 390 Ω	RCX6JATZ0391 RCX4JATZ0391
R649	CARBON RES. 1/6W J 390 Ω or CARBON RES. 1/4W J 390 Ω	RCX6JATZ0391 RCX4JATZ0391
MISCELLANEOUS		
CF640	CERAMIC RESONATOR 4.433MHZ	FY0445PMR001

DECK PARTS LIST

Note:

Three different, but interchangeable, types of Capstan Motor (B37) may be installed in these models. Based on the type of capstan motor, items B365 and L1063 will be used/not used as shown in the table below.

Type	Part No.	B365	L1063
A	MMDZB12SJ007	Not used	Not used
B	MMDZB12SJ006	Not used	Not used
C	N9630CML	Used	Used

Ref. No.	Description	Part No.
2B6	DECK EARTH PLATE U17	OVM408662
2L051	SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
B1	CHASSIS ASSEMBLY MK8	OVS409370
B2	CYLINDER ASSEMBLY MK8 PAL 4HD-HIFI or CYLINDER ASSEMBLY(MK8) PAL 4HD HIFI	OVM202472
B3	LOADING MOTOR ASSEMBLY MK7	OVS408840
B4	MOTOR HOLDER MK8	OVM409330
B8	PULLEY ASSEMBLY MK6	OVS408132
B10	MOVING GUIDE T PREPARATION MK7	OVS409221
B11	LOADING ARM T ASSEMBLY MK7	OVS408858
B12	LOADING ARM S ASSEMBLY MK8	OVS409410
B13	LOADING LEVER ASSEMBLY MK7	OVS408821
B15	LUMIRROR WASHER 3.1X6X0.35	OVM403269
B21	LOADING BELT MK6	OVM407712
B27	TENSION LEVER ASSEMBLY MK8	OVS409374
B31	AC HEAD ASSEMBLY MK7	OVS408825
B32	REEL(T) MK8	OVM303516
B35	TAPE GUIDE ASSEMBLY MK8	OVS409359
B37	CAPSTAN MOTOR F2QTB36 or CAPSTAN MOTOR 288/CCM001 or CAPSTAN MOTOR F2QTB35	MMDZB12SJ007 N9630CML MMDZB12SJ006
B38	MODE LEVER MK8	OVM202450
B46	TAPE GUIDE ARM SPRING MK6	OVM407704C
B47	ADJUST SCREW M2.6X6(SOD)	OVM409436
B51	FF ARM MK8	OVM303504
B52	CAPSTAN BELT(2) MK6	OVM408223
B53	REEL P.S.W MK8	OVM409410
B73	FE HEAD(MK7) HVFHP0019A or FE HEAD ASSEMBLY or FE HEAD(MK7) MH-131SF7 or FE HEAD ASSEMBLY	DHVEC01AL004 N9730FEL DHVEC01Z0001 N9710FEL
B74	PRISM MK8	OVM303518
B81	M LEVER HOLDER MK7	OVM303171
B86	F BRAKE ASSEMBLY MK7	OVS408944
B108	P.S.W F	OVM402629A
B121	WORM MK6	OVM407662
B122	P.S.W C	OVM402626
B123	P.S.W (WORM THRUST) 02130250	OVM403348
B126	PULLEY MK6	OVM407661
B132	CLUTCH ASSEMBLY MK8	OVS409379A
B133	IDLER ASSEMBLY MK8	OVS409377
B142	SHAFT LOCK ASSEMBLY	OVS404642
B144	CLUTCH WASHER MK2	OVM404428
B145	MAIN LEVER ASSEMBLY MK7	OVS408822
B148	TG CAP MK6	OVM407664C
B300	FL ASSEMBLY MK8	OVS409361
B302	RACK MK8	OVM202451
B303	FRONT DOOR OPENER MK7	OVM303185G

Ref. No.	Description	Part No.
B304	DOOR OPENER MK7	OVM303148H
B308	SLIDER SHAFT MK8	OVM409335
B313	DRIVE GEAR SPRING MK7	OVM408557A
B319	CASSETTE SPRING MK8 or CASSETTE SPRING MK8	OVM409333 OVM409333
B329	HOLDER KICK ARM N MK6	OVM302956B
B332	HOLDER ARM SPRING MK6	OVM408062B
B339	REEL(S) MK8	OVM303515
B344	CASSETTE GUIDE R MK8	OVM100786E
B345	CASSETTE GUIDE L MK8	OVM100785E
B347	GUIDE HOLDER(F) MK8	OVM303522
B348	GUIDE HOLDER R MK8	OVM303502
B350	SLIDER GEAR MK8 or SLIDER GEAR MK8	OVM409329 OVM409329
B352	CASSETTE DRIVE GEAR(N) MK6	OVM302969A
B353	CASSETTE PLATE SUB ASSEMBLY MK8	OVS409368
B354	SLIDER(R) MK8	OVM202454
B355	SLIDER(L) MK8	OVM202453
B358	CAM MK7	OVM100724
B359	CLEANER LEVER MK7	OVM303350
B360	CLEAN ROLLER MK4	OVM406123
B361	CLEAN BEARING MK4	OVM406124
B365	RADIATOR PLATE MK7	OVM408563
B401	VH CONNECTOR 9A MK7	OVM303176
B402	ACH-9B MK6	OVM407672
B403	ACH CONNECTOR A MK7	OVM303177J
B404	ACH CONNECTOR B MK7	OVM408582
B405	P.S.W CUT 1.6X4.0X0.5T	OVM408485A
B406	SENSOR GEAR MK7	OVM408575
B407	M GEAR MK6	OVM407666A
B409	EJECT SPRING MK7	OVM408716
B410	PINCH ROLLER ASSEMBLY MK7	OVS408809
B411	PINCH SPRING MK7 or PINCH SPRING MK8	OVM408550 OVM409340B
B412	S BRAKE LEVER MK7	OVM303150
B413	M BRAKE T SUB ASSEMBLY MK7	OVS409222
B414	M BRAKE S ASSEMBLY MK7	OVS408814
B415	S BRAKE L SPRING MK7	OVM408556
B416	M BRAKE T SPRING MK7	OVM408588
B417	TENSION SPRING MK8	OVM409452
B418	TENSION PLATE MK8	OVM409451
B419	BT ARM MK7	OVM303182
B420	REC ARM MK7	OVM303188
B421	REC ARM SPRING MK6	OVM407708D
B422	SWV PCB ASSEMBLY MK8/MODE SW.	OVS409408
B423	SHIELD, CYLINDER U17 FTZ	OVM202352
B425	LOCK LEVER SPRING MK7	OVM408555
B426	KICK PULLEY MK6	OVM407663B
B427	KICK SPRING MK6	OVM407701
B428	P.S.W CUT 1.6X4.0X0.5T	OVM408485A
B435	F BRAKE SPRING MK7	OVM408722A
B460	BT SPRING MK7	OVM408551
B461	MAIN LEVER SPRING MK8 or MAIN LEVER SPRING MK7	OVM409494 OVM408554E
B462	PRISM(L2) MK8	OVM409371
B463	PRISM(R2) MK7	OVM409176B
B464	CASSETTE DRIVE LEVER SUB ASSEMBLY MK7	OVS408827A
B465	INSULATION COVER MK8	OVM303517
B468	SOFT SPRING A MK7	OVM409214
B470	TAPE GUIDE ARM ASSEMBLY MK8	OVS409358
B471	CASSETTE GUIDE R ASSEMBLY MK8	OVS409363
B472	SLIDER R ASSEMBLY MK8	OVS409365

Ref. No.	Description	Part No.
B473	SLIDER L ASSEMBLY MK8	0VSA09366
B474	CASSETTE DRIVE LEVER ASSEMBLY MK7	0VSA08813A
B475	BT ARM ASSEMBLY MK7	0VSA08815
B476	REC ARM ASSEMBLY MK7	0VSA08819
B480	CLEANER ASSEMBLY MK7	0VSA09032
CL281	PARALLEL WIRE 2P AWG26/GREY/UL2651	WX1N8002-001
L1051	SCREW, S-TIGHT M2.6X6 PAN HEAD +	GPMS9060
L1053	SCREW PRISM MK7	0VM409038
L1063	SCREW, S-TIGHT M2.6X4 PAN HEAD +	GPMS9040
L1081	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1101	SCREW, P-TIGHT 3X10 BIND HEAD+	GBMP3100
L1114	SCREW, P-TIGHT M2X6 WASHER HEAD+	GCMP2060
L1151	SCREW, SEMS M3X4 PAN HEAD +	CPM33040
L1191	SCREW, P-TIGHT M2.6X12 WASHER HEAD+	GCMP9120
L1321	P-TIGHT SCREW 3X8 BIND + CHROME	GBMP3080
L1341	SCREW, P-TIGHT M2.6X8 BIND HEAD+	GBMP9080
L1342	SCREW, P-TIGHT M2.6X6 BIND HEAD+	GBMP9060
L1402	SCREW, P-TIGHT M2X6 WASHER HEAD+	GCMP2060
L1403	SCREW, P-TIGHT M3X10 WASHER HEAD+	GCMP3100
L1406	SCREW, S-TIGHT M2.6X4 CUP HEAD+	GCMS9040
L1407	SCREW, S-TIGHT M2.6X8 PAN HEAD +	GPMS9080
L1410	SCREW, P-TIGHT 3X25 BIND HEAD+	GBMP3250
L1411	SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1412	SCREW, S-TIGHT M3X5 BIND HEAD+	GBMS3050
L1450	SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1451	SCREW:SLIDER R MK7	0VM408853

Mode SW CBA (SWV)

Ref. No.	Description	Part No.
	MODE SW CBA (SWV)	0VSA09408
R281	CARBON RES. 1/4W G 3.6k Ω or	RCX4GATZ0362
	CARBON RES. 1/6W G 3.6k Ω	RCX6GATZ0362
R282	CARBON RES. 1/4W G 1.5k Ω or	RCX4GATZ0152
	CARBON RES. 1/6W G 1.5k Ω	RCX6GATZ0152
R283	CARBON RES. 1/4W G 10k Ω or	RCX4GATZ0103
	CARBON RES. 1/6W G 10k Ω	RCX6GATZ0103
R284	CARBON RES. 1/4W G 22k Ω or	RCX4GATZ0223
	CARBON RES. 1/6W G 22k Ω	RCX6GATZ0223
R285	CARBON RES. 1/4W G 470 Ω or	RCX4GATZ0471
	CARBON RES. 1/6W G 470 Ω	RCX6GATZ0471
SW281	MODE SWITCH HMW0420-910010 or	SSR0104HD004
	MODE SWITCH SSS-27MD	SSR0104KB002